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U.S. Department of Agriculture

VOL. 1

1974 BUDGET EXPLANATORY NOTES

PERIODIC
CURRENT SERVICE ALPHABETIC

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DEPARTMENTAL MANAGEMENT

Office of the Secretary
Office of the Inspector General
Office of the General Counsel
Office of Management Services

SCIENCE AND EDUCATION PROGRAMS

Agricultural Research Service
Animal and Plant Health Inspection Service
Cooperative State Research Service
Extension Service
National Agricultural Library

AGRICULTURAL ECONOMICS

Statistical Reporting Service
Economic Research Service

PREFACE

Project Statements

The obligations shown in the Project Statements are based on the appropriations and activities proposed in the 1974 budget estimates. In some Project Statements the activities are further divided into subcategories, reflecting a more detailed description of the work conducted under the appropriation items.

In those accounts where prior year balances are also available for obligation during the year, such amounts are shown in a separate Project Statement.

In 1973 the Department is effecting a travel reduction of \$10 million. The estimated amounts applicable to a given account are shown in a footnote to the Project Statement. The activities have not been reduced to reflect this nonrecurring savings.

The amounts shown in Project Statements for the past year are taken directly from the accounting records to the maximum extent possible.

Statement of Available Funds and Man-Years

A statement is included for each agency, immediately following the introductory purpose statement, to itemize all sources of funds available to the agency and to show the related man-years from each source of funds.

These statements reflect the best available information at the time these Explanatory Notes were prepared (January 1973). However, it is not possible in many instances to determine in advance the extent to which agencies may be requested to perform additional services for other Federal and non-Federal agencies or organizations. Therefore, amounts of actual reimbursements and other funds received from sources other than appropriations directly to the agency may vary from those shown in the statements.

In those cases where the funds are not appropriated (reimbursements, trust funds, transfers, revolving funds, etc.), the dollar amounts shown represent actual or estimated obligations for the year.

In some instances there may be duplication of amounts shown. This results largely from cases involving reimbursements between different agencies within the Department, and where amounts are paid from appropriations to the Working Capital Funds. There is no duplication of the man-years shown.

Transfers to the General Services Administration for space rental -- In accordance with authority provided in the 1973 Treasury, Postal Service, and General Government Appropriation Act, Federal agencies are required to transfer funds to GSA for additional rental space acquired during the current fiscal year. In the following year the estimates of the Department occupying such space are reduced by the amount of the space rental cost, with funds for such costs being included in the GSA appropriation thereafter.

The adjustments in fiscal year 1973 for this purpose are as follows:

<u>Agency</u>	<u>Amount</u>
Agricultural Research Service	\$11,000
Federal Crop Insurance Corporation:	
Administrative and Operating Expenses	22,000
Economic Research Service	3,000

<u>Agency</u>	<u>Amount</u>
Soil Conservation Service:	
Conservation Operations	69,000
River Basin Surveys and Investigations	4,000
Watershed Planning	3,000
Watershed and Flood Prevention Operations	21,000
Resource Conservation and Development	5,000
Total, Soil Conservation Service	102,000
Farmers Home Administration:	
Salaries and Expenses.....	88,000
Animal and Plant Health Inspection Service	252,000
Agricultural Marketing Service:	
Marketing Services	128,000
Food and Nutrition Service:	
Child Nutrition Programs	7,000
Food Stamp Program	96,000
Total, Food and Nutrition Service	103,000
Packers and Stockyards Administration	8,000
Office of the Inspector General	18,000
Forest Service:	
Forest Protection and Utilization	428,000
Total, United States Department of Agriculture	<u>1,163,000</u>

a/ Total may not add due to rounding.

Employment Ceilings

As a part of the overall economic program of the government, the Department of Agriculture's employment ceilings for June 30, 1973 are 83,380 full-time employees in permanent positions and 114,580 total employees. This was a slight decrease from the number which had been projected in the 1973 budget submitted to the Congress in January of 1972. A further decrease in the ceilings of 4,530 full-time employees in permanent positions and 4,740 total employees is planned for fiscal year 1974. Decreased employment will not result in any significant savings in fiscal year 1974 and any savings will be used principally to offset increased costs of operations.

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OFFICE OF THE SECRETARY

Purpose Statement

The Secretary of Agriculture, assisted by the Under Secretary, the Assistant Secretaries, and members of their immediate staff, directs and coordinates the work of the Department; formulates and develops policy; maintains relationships with agricultural organizations and others in the development of farm programs; and maintains liaison with the Executive Office of the President and with members of Congress on all matters pertaining to legislation and policy to insure effective performance of the agricultural program.

The following activities are also included under the Office of the Secretary:

Budgetary and financial administration. The Office of Budget and Finance is the staff agency responsible for the overall administration of the budgetary, fiscal and related activities of the Department. It provides leadership and general direction of these activities throughout the Department. Its responsibilities include the acquisition and distribution of funds, fiscal policies and systems, financial reporting and related budget and fiscal matters. The Office is also responsible for operation of the Department's centralized payroll system and development of a centralized voucher payments system.

General operations. The Office of Plant and Operations provides staff and support services to agency programs in the management of real and personal property, contracts, grants, agreements, business assistance, supply, transportation, motor vehicles, telecommunications, physical security, correspondence, records and mail; and operates central supply, printing, composing, copier, mail and messenger services for agencies in Washington, D. C.

Management and ADP systems. The Office of Information Systems provides leadership in planning, administering, and evaluating the Department's management program. The Office initiates appraisals of management activities and operating policies of the Department to achieve more effective and lower cost approaches to the conduct of business. It designs and revises management systems, and develops guidelines for a comprehensive data processing program designed to promote effective use of automatic data processing in the Department.

Personnel administration. The Office of Personnel has responsibility for the personnel management program of the Department. Department-wide leadership, supervision and coordination are provided in organization, classification and standards; salary and wage administration; employment and manpower planning; personnel and records security; standards of employee conduct, discipline; employee relations; employee appeals; employee development; program evaluation; health, safety and welfare; incentive awards; labor-management relations; personnel legislation; employee fringe benefits; equal employment opportunity programs; and other personnel activities.

Regulatory hearings and decisions. This activity includes the work of the Office of Administrative Law Judges and of the Judicial Officer. The Administrative Law Judges, formerly Hearing Examiners, carry out the provisions of the Administrative Procedure Act relating to the holding of hearings (5 U.S.C. 556). Hearings are held in connection with prescribing of new regulations and orders, and on disciplinary complaints filed by the Department, or on petitions filed by private parties asking relief from some action of the Department.

The Judicial Officer renders final administrative decisions in regulatory proceedings, and is responsible for preparing "Agriculture Decisions", a monthly publication containing decisions in connection with all quasi-judicial functions and administrative hearings of the Department.

The Hearing Clerk Unit, which operates under the Judicial Officer, is responsible for receiving, filing and acknowledging the receipt of complaints, petitions, answers, briefs, arguments, and other documents filed with the Department of Agriculture in connection with quasi-judicial and administrative proceedings under various regulatory laws administered by the Department.

Equal opportunity. The Civil Rights Act of 1964 and subsequent Executive Orders require program and policy direction in the development and enforcement of Department equal opportunity responsibilities. This involves review, analysis, and evaluation of agency programs and operations to determine compliance with policies, rules, and regulations of the Department and the Federal Government. It also involves the processing of complaints of discrimination in the execution of the Department's programs and the coordination of enforcement of the contract compliance requirements of Executive Order 11246.

Information services. The Office of Information has general direction and supervision of all publications and other information policies and activities of the Department including the final review, illustrating, printing and distribution of publications; clearance and release of press, radio, television, and magazine materials; maintenance of central files of news and general illustration-type photographs and color slides; and the preparation and distribution of exhibits and motion pictures. The Office publishes the Yearbook of Agriculture, the annual report of the Secretary of Agriculture, and the Department List of Publications; handles the details of distributing farmers' bulletins allotted to Members of Congress; and services letter and telephone requests for general information received in the Department. Under the Department's Working Capital Fund, the Office produces visual informational materials, such as motion pictures, exhibits, art and graphic materials, and still photographic work for the Department and other Government agencies.

The Secretary's Office and the staff offices financed from this appropriation are all located in Washington, D. C. In addition, 10 employees paid from funds transferred from the Office of Emergency Preparedness and the Defense Civil Preparedness Agency are located in Boston, Massachusetts; New York, New York; Philadelphia, Pennsylvania; Atlanta, Georgia; Chicago, Illinois; Dallas, Texas; Kansas City, Missouri; Denver, Colorado; San Francisco, California; and Seattle, Washington. The Management Data Service Center and the Central Voucher Payment Center under the direction of the Office of Budget and Finance, and the New Orleans Computer Center under the direction of the Office of Information Systems are located in New Orleans, Louisiana.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

Item	Actual		Estimated		Budget Estimate	
	1972		Available 1973		1974	
	Amount	Man-Years	Amount	Man-Years	Amount	Man-Years
Office of the Secretary:						
Salaries and expenses	\$9,485,000:	431:	\$11,112,000:	496:	\$10,933,000:	511
Grants and technical assistance ..	- -	-	- -	-	20,000,000:	-
Deduct allocation to Economic						
Research Service	-205,000:	-	- -	-	- -	-
Sub-total	9,280,000:	431:	11,112,000:	496:	30,933,000:	511
Obligations under other USDA						
appropriations:						
For travel and other expenses of						
administrative law judges in con-						
ducting regulatory hearings	15,581:	-	25,000:	-	25,000:	-
Health and other miscellaneous						
services for agencies of the						
Department	84,300:	3:	83,800:	4:	83,800:	4
Consideration of formal employee						
grievances and adverse action						
appeals for agencies of the De-						
partment	78,068:	4:	87,000:	4:	87,000:	4
Upward Mobility Program	- -	-	83,000:	7:	- -	-
Agricultural Research Service for:						
pesticides information	24,287:	-	25,000:	-	25,000:	-
Visitor Information Center	20,923:	2:	20,000:	2:	20,000:	2
Great Plains Conservation Program:	4,412:	-	- -	-	- -	-
Working Capital Fund:						
Centralized supply, duplicating,						
mail and communications services :	4,405,121:	219:	4,480,330:	225:	4,480,800:	225
Central defense programs	37,877:	1:	41,530:	1:	42,000:	1
Centralized personnel and payroll-						
ing operations	5,109,992:	248:	6,338,498:	250:	6,342,022:	250
Central voucher payment services ..	473,983:	12:	2,738,734:	124:	5,136,396:	350
Employee training programs	202,602:	2:	162,708:	2:	164,000:	2
Management and ADP						
Systems 1/	4,008,252:	111:	8,189,512:	225:	10,493,604:	227
Central visual production services:	2,610,482:	93:	2,435,190:	90:	2,441,534:	90
Total, working capital fund	16,848,309:	686:	24,386,502:	917:	29,100,356:	1,145
Total, Other USDA appropriations :	17,075,880:	695:	24,710,302:	934:	29,341,156:	1,155
Total, Agricultural Appropriation						
Bill	26,355,880:	1,126:	35,822,302:	1,430:	60,274,156:	1,666
Other funds:						
Office of Emergency Preparedness:						
Program coordination and direc-						
tion	87,138:	3:	- -	-	- -	-
Regional representatives	166,517:	7:	312,000:	9:	312,000:	9
Total, Office of Emergency Pre-						
paredness	253,655:	10:	312,000:	9:	312,000:	9

Item	Actual		Estimated		Budget Estimate	
	1972		Available 1973		1974	
	Amount	:Man- :Years:	Amount	:Man- :Years:	Amount	:Man- :Years:
Defense Civil Preparedness Agency-		:		:		:
for expenses incurred under the		:		:		:
Rural Civil Defense program	49,820:	- :	50,000:	- :	50,000:	- :
Forest Service - for the Board of		:		:		:
Forest Appeals	2,124:	- :	2,500:	- :	2,500:	- :
Agency for International Develop-		:		:		:
ment (training of foreign parti-		:		:		:
cipants)	840:	- :	1,000:	- :	1,000:	- :
Miscellaneous contributed funds ,	- - :	- :	6,000:	- :	- - :	- :
Reimbursements from sale of photo-		:		:		:
graphs	75,173:	- :	71,000:	- :	71,000:	- :
Other miscellaneous services	21,891:	- :	5,200:	- :	5,200:	- :
Total, other funds	403,503:	10:	447,700:	9:	441,700:	9
Total, Office of the Secretary	26,759,383:	1,136:	36,270,002:	1,439:	60,715,856:	1,675

✓ The Washington Data Processing Center, SRS was transferred to the Office of Information Systems October 1, 1972. Related data processing work performed prior to that date are included as follows: FY 1972, \$3,609,150 and 92 man-years; FY 1973, \$960,000 and 24 man-years.

(a) Office of the Secretary

Appropriation Act, 1973	\$11,112,000
Budget Estimate, 1974	<u>10,933,000</u>
Decrease in Appropriation	<u>-179,000</u>

SUMMARY OF INCREASES AND DECREASES

	<u>1973</u>	<u>Increase or Decrease</u>	<u>1974 Estimate</u>
Personnel administration:			
For equal employment opportunity and the Upward Mobility program	\$1,076,343	+\$256,000	\$1,332,343
Information services	3,464,000	-435,000	3,029,000
All Other	<u>6,571,657</u>	- -	<u>6,571,657</u>
Total available	<u>11,112,000</u>	<u>-179,000</u>	<u>10,933,000</u>

PROJECT STATEMENT

Project	1972	1973 (estimated)	Increase or Decrease	1974 (estimated)
1. Program and policy direction and coordination:				
(a) Office of the Secretary and Under Secretary	\$1,366,848	\$1,259,430	- -	\$1,259,430
(b) Assistant Secretaries	489,915	475,335	- -	475,335
2. Budgetary and financial administration	1,023,660	1,121,950	- -	1,121,950
3. General operations	888,759	925,637	- -	925,637
4. Management and ADP systems:	520,658	544,335	- -	544,335
5. Personnel administration	1,030,511	1,076,343	+\$256,000(1)	1,332,343
6. Regulatory hearings and decisions	363,820	362,370	- -	362,370
7. Equal opportunity	1,065,578	1,882,600	- -	1,882,600
8. Information services	2,406,524	3,464,000	-435,000(2)	3,029,000
Unobligated balance	<u>126,309</u>	- -	- -	- -
Total available or estimate .	<u>9,282,582</u>	<u>11,112,000</u>	<u>-179,000</u>	<u>10,933,000</u>
Allocation to Economic Research Service	+202,418	- -		
Total appropriation	<u>9,485,000</u>	<u>11,112,000</u>		

(1) An increase of \$256,000 in personnel administration activities (\$1,076,343 available in FY 1973, consisting of:

(a) An increase of \$145,000 for equal employment opportunity (EEO)

Need for Increase:

P.L. 92-261, approved March 24, 1972, amends the Civil Rights Act of 1964 to reaffirm the requirement that all Federal personnel actions be free from discrimination and to provide for affirmative action in the EEO program, the submission of comprehensive EEO action plans at the national and regional levels to the Civil Service Commission, and periodic progress reports.

Responsibility for the review and coordination of the Department's Equal Employment Opportunity Program has been delegated to the Office of

Personnel. The enactment of P.L. 92-261 has resulted in a substantial increase in the workload the office must handle to carry out this responsibility. This is especially true because the Department's diversification of programs and wide geographical distribution of employees requires a concerted and coordinated effort to assure the development of ongoing action plans at both the national and field levels.

The staff support provided by the Office of Personnel involves work in the following areas:

- Preparation of necessary EEO regulations and procedures;
- Development of the Department's overall EEO action plan and review of individual agency plans;
- Evaluation of program progress through on-site reviews;
- Liaison with Federal agencies and outside groups and organizations which have an interest in the Department's EEO program;
- Assistance to USDA agencies in meeting training requirements related to EEO;
- Development of statistical data and special reports pertaining to EEO;
- Review of job qualifications as they related to EEO;
- Coordination of special hiring and employee development programs;
- Publicity of program objectives as well as the rights and responsibilities of employees; and
- Coordination and leadership of man power planning and recruitment efforts.

In addition, P.L. 92-261 provides for recourse to the Courts in the matter of discrimination complaints with provisions for back pay, retroactive promotion, and other remedies. The enactment of this law will add increased emphasis to the EEO appeals program.

During FY 1971, 254 complaints were registered with EEO Counselors in USDA. Thirty-four of these became formal complaints. For the first half of FY 1972, 146 complaints were registered with EEO Counselors, 30 of which became formal. If the FY 1972 trend continues, there will be 292 registered complaints with 60 formal complaints requiring the services of examiners.

Complaints, therefore, were increasing even before the enactment of the law. With retroactive pay and promotion, plus recourse to the Courts, approximately 400 registered complaints and 100 formal complaints can reasonably be anticipated for FY 1974.

Plan of Work:

In the past, EEO responsibilities have been carried out within the Office of Personnel by a small staff financed by a transfer of funds from the Office of Equal Opportunity. In fiscal year 1973 \$55,000 was transferred for this purpose. The requested increase would provide for a direct appropriation to support the existing staff (\$55,000) and an increase (\$90,000) which would permit the hiring of three professionals and two support personnel necessary to carry out the additional responsibilities contained in P.L. 92-261.

Elimination of the transfer of funds from the Office of Equal Opportunity to the Office of Personnel will result in a program increase of \$55,000 in the Office of Equal Opportunity. These funds will be used to provide an additional three staff members to assist USDA agencies in assuring non-discrimination in the delivery of the Department's programs under Title VI of the Civil Rights Act of 1964.

(b) An increase of \$111,000 for Upward Mobility

Need for Increase:

P.L. 92-261 also requires each Federal Department to establish training and educational programs to provide maximum opportunity for employees to advance to their highest potential.

The Department's Upward Mobility Program has four major components: adult basic education, job skills training, professional education, and college study. In addition, career guidance counseling will be provided to program participants.

The program will have about 825 participants in the first year of operation and would be centrally coordinated by the Office of Personnel. Individual USDA agencies will provide the actual training, educational and job opportunities. Implementation of this program will place the Department in compliance with the requirements of P.L. 92-261.

Plan of Work:

The requested increase will support a staff of five professionals and two support personnel to develop, implement and monitor the Department's Upward Mobility Program.

The activities of the proposed staff would include the following:

- Plan and implement all program components, including design of specific components, estimation of participation, and negotiation of contracts;
- Coordinate agency participation;
- Assist in the selection of program participants and provide career guidance counseling;
- Maintain contacts with employees and employee groups; and
- Review program progress.

(2) A net decrease of \$435,000 in information services, consisting of:

(a) An increase of \$65,000 for postage costs

Need for Increase:

Mailings from the Office of the Secretary include periodicals of all agencies of the Department as well as press releases, program announcements, and a host of other items related to the Department's information program. While the total volume of mailings has remained relatively stable over the past three years, costs have risen substantially. This is due both to increases in postal rates and to changes in postal regulations which require the many items such as educational and library materials be mailed under higher classes than was previously the case.

These changes in regulations effect about 33 percent of the mail leaving the Office of the Secretary.

Thus, on an annual volume of about 1.6 million pieces of mail, costs have risen from \$129,000 in fiscal year 1971 to an estimated \$193,000 in fiscal year 1974. The 1974 estimate was calculated as follows:

<u>Type of Mail</u>	<u>Volume</u>	<u>Estimated Annual Cost (in thousands)</u>
First Class:		
Regular	50,000	\$4.0
Air Mail	6,600	.7
Large Envelopes	160,700	39.6
Third Class:		
Bulk Mail	410,000	20.5
Piece Mail	848,000	67.8
Fourth Class	112,000	54.7
All Other	<u>12,700</u>	<u>5.7</u>
Total	<u>1,600,000</u>	<u>193.0</u>

The requested increase would permit the office to meet these costs without a reduction in the ongoing program level for information work.

(b) A decrease of \$500,000 for information work

The 1973 Appropriation Act provided a total of \$3,464,000 for information work, an increase of \$1,000,000 above the President's Budget. In its report, the House Subcommittee on Agriculture-Environmental and Consumer Protection Appropriations, expressed its great concern with the lack of understanding among the general population of their dependence for food and fiber on the less than 5 percent of our population who are now on farms. The Committee went on to say, "There seems to be little understanding that a financially healthy agriculture is essential to the overall economy and that agricultural net return on investment has dropped drastically. Coupled with this is an equally serious misunderstanding of agriculture programs of soil, water, and timber conservation. This situation is so serious to the people of the nation that the Committee has transferred the appropriation of the Office of Information and merged the appropriation with that of the Office of the Secretary. The Committee calls on the Secretary to review the functions and staffing with a view to raising its position, in addition to present duties, to include that of a public affairs office. The cost increases of printing and meeting the needs of Congress have, over the years, caused a more limited role than the Congress has expected. The Committee is recommending a total of \$3,464,000 to fulfill the needs for agricultural education and information of general interest, without regional offices but including research in cooperation with the land grant institutions, consultation with media consultants, cooperative programs with expert agencies...."

During fiscal year 1973 action was taken to start implementing the Committee's recommendations to (1) strengthen the information activities in the Department and (2) to communicate more effectively with the non-farm public. A review of the functions and staffing of the office was conducted with the aid of the Advisory Group which included nationally prominent agricultural communicators. As a result, action has been

taken by the Department of Agriculture to (a) change the designation of the Office of Information to the Office of Communication to reflect more accurately its key role in the Department's overall communications effort, (b) provide that the Director of Communication shall report directly to the Secretary of Agriculture to better serve the communication needs of the Department of Agriculture, and (c) appoint a director of public affairs who will work in concert with the Office of Communication to further strengthen the work of the Department with the general public.

In addition, \$500,000 of the additional funds provided by the Congress were used in fiscal year 1973 to strengthen and expand the activities of the office.

More specifically, projects have been initiated and given a priority for development both in terms of time involved and funds required. Dr. James Evans of the University of Illinois was employed to excerpt the known public surveys of general urban attitudes and understanding concerning farmers and the contribution of agriculture in providing food and fiber. This material is being published and made available across the country for the use and guidance of groups in their information programs.

Land Grant Institutions have been contacted for possible research studies that they might perform that would lead to guidelines for more effective communications with special interest groups and the general public. It is anticipated that funds will be made available by the Office of Communication to expedite worthy research projects.

Negotiations are underway with six national professional agricultural communicator groups who propose to form a single research organization that would cooperate with the Office of Communication in conducting national surveys on the prevailing understanding of the general public on agricultural matters.

The Office of Communication has assembled an extensive fact book on food and agricultural matters which is being printed for the use of speakers, writers, leaders and others across the country as an aid in communicating useful and important information to the public. This basic information is being used to develop illustrated public presentations, exhibits, motion pictures and other forms of communication to be used by the Department of Agriculture and others in reaching the public.

The Office of Communication conducted a pilot project with the University of Maryland which consisted of cooperative exhibits with the University and local farm groups in shopping malls in several suburban Washington, D. C. areas. The purpose was to develop materials and techniques that might be used by other universities and farm groups across the country in local shopping malls.

Plans were developed and work started on a professional agricultural exhibit that would appeal to the general public and which could be used at state fairs, garden shows and similar events.

The Office of Communication installed a series of radio "spot-masters" phone-in "message banks" to enable the Department to record varied daily information messages which could be picked up automatically by phone by farm radio stations, minority radio and press outlets, and by food and garden editors.

The Office of Communication has expanded its travel for professional staff members to work more closely with commercial and state government information outlets in the interest of developing more materials for communication with the general public.

The speaking schedule of the Secretary of Agriculture, and press interviews, have been greatly expanded in communication outlets where he addresses the general public on food matters.

The Director of the Office of Communication has appeared at several national meetings on the subject of "telling Agriculture's story."

The visual material for the Department of Agriculture weekly TV program "Across the Fence" has been upgraded to increase the effectiveness of this program which appears on more than 100 TV stations weekly.

Other projects are underway at this time and will be implemented within the proposed program level for fiscal year 1974.

STATUS OF PROGRAM

Program and Policy Direction.

The formulation and direction of policy and programs is carried out by the Secretary of Agriculture, the Under Secretary, the Assistant Secretaries, and Directors, staff advisors, and related supporting staff. Under the direction of the Secretary, the Immediate Office of the Secretary exercises broad executive responsibility for the development of national agricultural policies and the general management of the Department of Agriculture, within the framework of laws enacted by the Congress and regulations promulgated by the President. It coordinates the activities of the Department's constituent agencies into a unified agricultural program, designed to achieve, efficiently and economically, the goals for American agriculture established by the Congress and the President. The Department's programs, in turn, are coordinated with the activities of other Government departments and agencies both in domestic and foreign affairs, to ensure consistency in policies and methods in governmental administration.

In fulfilling these responsibilities, the Immediate Office of the Secretary provides general leadership and direction to the Department's constituent agencies. Agricultural policies and plans are formulated and adapted to the complex changing conditions in the Nation's economy. The progress of agricultural programs is continuously evaluated to ensure that accomplishments are consistent with the Department's prescribed objectives and with established standards of sound management. Program and management problems with special significance and broad implications are given careful attention to assure their constructive resolution in a manner consistent with overall policy.

Budgetary and Financial Administration

The Office of Budget and Finance provides leadership and direction in budgetary and fiscal matters and performs necessary staff work such as:

1. Preparation of budget estimates including

- Review and analysis of budget estimates;
- Preparation of budgetary and statistical statements and summaries;
- Consolidation of materials for the estimates submitted to the Office of Management and Budget;
- Consolidation of budget data and preparation and maintenance of the rolling budget file; and
- Preparation of supporting justifications for budget requests, in cooperation with the Department's agencies, for use by the Appropriations Committees of the Congress in considering the President's Budget.

2. Management and control of funds including

- Allotment and apportionment of appropriated funds;
- Review of obligation and expenditure reports, particularly to assure that programs are carried out in accordance with the intent of the Congress, the requirements of the Executive Branch, and pertinent laws and regulations;
- Special arrangements, as required, for financing cooperative undertakings; and
- Analysis of Department manpower requirements.

3. Direction of fiscal policies and accounting systems including

- Formulation of accounting and fiscal policies, and consultation on and development of accounting systems; and

- Liaison with the General Accounting Office, the Office of Management and Budget, and the Treasury to advance financial management objectives throughout the Government.
- 4. Operation of certain central services (under the working capital fund) including
 - The Department's central payroll and personnel system;
 - The Department's central voucher payment system; and
 - Development of a central Department-wide accounting system.
- 5. Various other staff services such as
 - Assistance in developing a legislative program for the Department;
 - Liaison with the Office of Management and Budget and the Congress on legislative reports;
 - Administration of limitations on employment and personnel compensation;
 - Assistance in the administration of committee management through record-keeping, preparation of reports and correspondence;
 - Review and appraisal of agency cost reduction validation procedures; and
 - Coordination of responses to requests from members of Congress and the general public for information about the program and financial affairs of the Department.

Selected Examples of Recent Progress

Central Accounting System. In fiscal year 1972, the Secretary of Agriculture established a policy to develop a uniform Department-wide accounting system. This step was taken to improve the quality and uniformity of financial data within the Department.

Central Voucher Payment Center. In fiscal year 1972, the Office of Budget and Finance developed a system and facility for the central payment of administrative vouchers for the Department. Previously, these vouchers have been processed for payment at hundreds of agency locations throughout the country. The centralized processing of travel and transportation vouchers began in January, 1973 with all other administrative vouchers to be similarly processed by the early part of fiscal year 1974.

When fully implemented, the system will provide service at a lower cost than previously available and with fewer employees. Personal services and ADP costs required under the decentralized method of payment total \$8.1 million while comparable costs projected under the centralized method of payment total \$4.0 million, resulting in an annual savings of \$4.1 million. An estimated savings of 510 man-years will also result. In addition, a central system will enable vendors to bill one location and direct all inquiries to that office, and payments to the public, other agencies and Department employees will be expedited as a result of the application of automatic data processing techniques to a large volume of transactions.

Accounting Systems Approval. During fiscal year 1972, the Comptroller General approved the designs of three accounting systems. These were the system of the Agricultural Marketing Service and the systems of Agriculture Research Service and Office of Management Services for working capital fund operations.

Minority Owned Banks. The Department exceeded its goal in fiscal year 1972 to maintain a monthly balance of \$2 million in minority-owned banks.

Grants and Contracts with State Governments. Under the cognizant agency concept prescribed by Office of Management and Budget Circular A-87, the Department approved indirect cost allocation plans submitted by 22 State government agencies.

Legislative and Financial Reporting. Staff assistance in preparing and coordinating legislative reports involved annual workload as follows:

<u>Fiscal Year</u>	<u>Number of Reports</u>
1970	508
1971	677
1972	504

In addition, during fiscal year 1972, over 115 inquiries for financial data on Department operations were received from Members of Congress and interested citizens. Also, 17 financial tables were prepared for use at hearings on the fiscal year 1973 appropriations bill. Guidance was provided the agencies of the Department, and a liaison function was provided between this and other Departments in three major reporting areas: data on obligations by geographic location, Catalog of Federal Domestic Assistance, and Grant-in-aid to States.

General Operations

Real Property Management. The Office of Plant and Operations provides general direction to agencies in the management of space occupied by their operations; their building construction operation and maintenance programs; abatement of pollution at Federal facilities; location of facilities in areas of lower population density; administration of Uniform Relocation Assistance Act, identification of historical sites, and related activities.

New Building Construction. At the end of fiscal year 1972, design was complete on 10 projects with an estimated cost of \$14,775,000 but construction contracts had not been awarded. There were 3 projects under construction at a value of \$2,173,954 with 2 projects completed with a value of \$3,083,840.

Disposition of Real Property. Removal of unneeded or outmoded facilities from inventory results in savings in protection and maintenance costs. The Department disposed of such facilities costing \$5,021,727 and property costing \$5,057,016 was declared surplus. The year-end inventory of surplus real property not yet disposed of was \$775,549. In addition, the Department reported as excess to the General Services Administration 26 parcels of real property.

Acquisition of Real Property. During the year four parcels of excess land totaling 531.3 acres were acquired. Three of the parcels were acquired without cost to the Department, the other parcel cost \$1,600. The appraised value of the properties acquired was \$53,900.

Consolidated Housing. Continued effort was made, working through State Administrative Committees, to accomplish field office consolidations to provide one-stop services for farmers and ranchers who must transact business with the Department. The Department's offices have been consolidated in 1,669 counties and 32 States. Attention has also been directed toward locating offices in areas of low population density or with labor surplus.

Real Property Reports. The Department has custody of 187,258,451.8 acres of land of which 160,500,509.7 acres are Public Domain lands. The estimated value of Public Domain land at the end of fiscal year 1971 was \$15,851,905,000. The acquired lands cost \$283,562,000; the cost of improvements on all lands totaled \$2,487,335,000.

The Department has under its control 6,389 leases which covered 3,338,375 square feet of space and 16,057.6 acres of land. The total rental for all leases was \$6,401,629.

Personal Property Management. The Office provides general direction to agencies in the management of the acquisition, storage, distribution, use and disposition of personal property; carries out a materials management program to assure that adequate control over all personal property is maintained.

Utilization of Excess Property. Redistribution was arranged for Department-wide excess personal property with an acquisition value of \$4,258,422 for use within the Department. This Office also coordinated the Department-wide program of utilizing excess personal property available from other Federal activities and provided agency assistance in this area. Property thus obtained during fiscal year 1972 amounted to \$44,935,053 at original acquisition cost.

District of Columbia Space. The awarding of a major construction contract by the General Services Administration to build a new Departmental cafeteria requires the temporary closing of 25,000 square feet of office space. To provide the necessary space for construction involved the moving of seven agencies and re-arranging occupancy in some 50,000 square feet of office space.

Cost Reduction. The Office continues to pursue the program to reduce costs in the procurement and management of property; compiles proven cost cutting tips and sends them to General Services Administration for inclusion in a Government-wide flyer which is published periodically.

The Office coordinated agency needs from other Federal agencies under supply support agreements for firefighting equipment, metal signs, textile materials, and arms and ammunitions. Twenty-five blanket purchase arrangements were made to enable agencies to obtain quantity discounts on individual purchases.

Agencies were provided assistance for their state support programs such as the use of Federal Supply sources by the Extension Service and the acquisition of excess property by State Foresters and State Extension Service.

Agency Assistance. The supply support agreement with the Department of the Navy for the acquisition of aircraft maintenance parts has been extended through fiscal year 1973. A similar agreement with the Air Force for the support of C-47 type aircraft was also renewed. These agreements permit agencies operating these aircraft to acquire maintenance parts and engine overhauls from DOD sources at a substantial savings.

Developing Use of Non-Government Resources. Six contracts were developed for use within the Department and 25 utility contracting transactions were reviewed prior to transmission to General Services Administration for execution. The participation of the Department in 36 Business Opportunity/Federal Procurement, and Minority Business Opportunity/Federal Procurement Conferences throughout the country was coordinated by this Office. One hundred twenty-six inquiries from the public on USDA procurement program were answered.

A Departmental action plan was promulgated calling for increased emphasis to greater reliance on State and local government and the private sector of the economy in the delivery of program services and for improvement of related program delivery systems.

Administering the Use of Contracts. Alleged violations of the labor standards provisions were investigated and the findings reported to the Secretary of Labor in 12 cases. The Small Business Set-Aside program continued to be stressed. Coordination was provided for the Department's participation in Small Business Administration's 8(a) program for minority-owned enterprises.

Transportation. This activity guides agencies of the Department in the transportation of things and in the management of the motor vehicle fleet and the use of GSA, commercial and employee-owned vehicles.

Shipping. Department regulations have been revised to incorporate those recommendations of the Joint Agency Transportation Study which have been adopted by the General Accounting Office. The use of commercial shipping forms and procedures is now required where feasible.

Motor Vehicle Management. During fiscal year 1972, the Department used 36,388 Government-owned or leased vehicles. Of these, 31,945 were agency-owned general and special purpose vehicles; 4,120 were Interagency Motor Pool System vehicles, and 323 were from commercial sources. Agency utilization and cost reports for the previous year were reviewed for (1) reasonableness of operating costs, (2) compliance with use standards in meeting organizational program requirements, and (3) upgrading within established age and mileage standards. Deviations from the Department average use and cost patterns were reviewed with the major fleet-owning agencies.

Telecommunications Management. Provides general assistance to the agencies in obtaining the most efficient telecommunications at reasonable costs. Maintains full liaison with General Services Administration. During fiscal year 1972, necessary actions were taken to install: 113 telecopiers, 15 teleprinters, 13 mobile telephones, 6 switchboards, 3 private line systems, 2 foreign exchange trunks, 3 Wide Area Telephone Service lines, and FTS access at 5 new locations.

Physical Security. Department regulations issued during fiscal year 1971 relating to the establishment of facility plans for the protection of life and property during emergencies arising from bomb threats, civil disorder, fires, explosions, natural disasters, and enemy attack were implemented nation-wide. The regulations were extended to include specific guidelines for the protection of computer facilities. Some 55 computer facility security plans were reviewed for compliance with the guidelines.

Central Departmental Operations. The Office provided (1) centralized correspondence referral and records management services for the Office of Secretary; (2) handling and coordination of Department space needs and problems in the District of Columbia and environs, coordinating with the General Services Administration, the National Capital Planning Commission and other Federal agencies; (3) redistribution of property that is declared excess by one USDA headquarters agency's offices to one having need for it and the disposal of that which is unneeded; (4) operation of the central mail distribution system serving all agencies in Departmental headquarters buildings; (5) operation of a central supply facility for providing forms and office supplies to agencies within the Metropolitan Area of Washington; also, supplies forms for activities in the field; (6) centralized Departmental services including reproduction and copying; and (7) centralized Departmental services on maintenance of mailing lists.

Mail Management. The Government-wide Mail Improvement Program is progressing and the U.S. Postal Service recently completed a series of Government-wide training seminars. Approximately 35,000 copies of the handbook "Prepare With Care" have been distributed to secretaries and other personnel responsible for the preparation of mail.

Records. During fiscal year 1972 the Office referred 64,492 communications sent to the Secretary and others of his staff to the proper office or agency for handling. This included 12,307 letters referred from the White House. An additional 80,520 that were sent to the Department were also referred.

1,454 pages of directives were prepared, including Secretary's Memoranda, new USDA Regulations or Amendments to existing Regulations, and other issuances. A checklist of the Secretary's Memoranda was issued to advise users of the current material. A supplemental index to the USDA Administrative Regulations and related directives was also issued.

Because of the complete changeover to Centrex of the USDA telephone system, a new USDA Telephone Directory was devised, including a new system for changing entries, setting type, and printing.

Management and ADP Systems

The functions and responsibilities of the Office of Information Systems have been broadened in areas relating to the management of the Department's computer resources, the development of information systems to support Departmental programs, and the improvement of management systems and procedures.

Management of the ADP Resource. Because of the growth of projects initiated or planned by agencies to satisfy their automatic data processing needs, the Department is managing ADP resources with the following objectives:

- (a) The establishment of an integrated system of management information data bases. Data bases will be designed and maintained to eliminate duplication of effort, to provide management emphasis among related program activities, and to give ready access to information which is needed for decision making.
- (b) The establishment of computer utilities. The number of major computer installations will be held to a minimum consistent with the need to satisfy agencies' program requirements. To the maximum extent feasible, the computer needs of dispersed field offices will be handled at these installations via the use of remote terminals, thereby eliminating the need for many local computer centers.

During the past year, a substantial amount of effort was devoted to these objectives:

- (a) Work is now underway to determine information needs of the Department and to identify those data bases which should be established.
- (b) Outmoded computers are being replaced with more efficient machines to accomodate the data processing requirements of all agencies of the Department. In all cases, better service has resulted, and, in some, substantial cost reductions are being realized. For example, one change, the Washington Computer Center (WCC)--(formerly the Washington Data Processing Center) was able to reduce its rates by 15% across the board.
- (c) Several of the major computer centers are being brought under centralized operational control to insure that adequate computer service is available to all agencies of the Department without the necessity of each agency acquiring its own computer facilities. Two Centers, the Washington Computer Center and the New Orleans Computer Center, have already been centralized.
- (d) The projected computer needs of individual agencies are being reoriented away from computer installations toward the establishment of terminal facilities at agencies' field locations. Examples of these include:
 - (1) The Meat and Poultry Inspection Program of the Animal and Plant Health Inspection Service will shortly be serviced through terminals from field locations to the New Orleans Computer Center.
 - (2) The Forest Service is planning for the installation of terminals to accomodate their data processing needs.
 - (3) The Agricultural Stabilization and Conservation Service is planning the concentration of its data processing resource at the Kansas City Computer Center. This Center will provide computer services to ASCS's field locations and those of several other agencies through terminal facilities.

Telecommunications Network. To eliminate the need for numerous computers and to improve the flow of information between field activities and headquarters, the Department is planning a communications network that will link field terminal locations and major computer installations.

As a pilot model we have installed such a link between the Washington Computer Center (WCC) and the New Orleans Computer Center (NOCC) which will permit the flow of data now being processed at NOCC through WCC to management staffs located in Washington. Payroll data from NOCC will also flow directly to the Treasury Department. We also plan to use this communications link to permit workload distribution of data processing so that when periodic peak workloads hit, the excess may be handled at either installation.

Information Data Base Development. An effort is also underway to establish information data bases that will contain essential information regarding the programs of the Department. During the past year, we have identified the information requirements that support each of the Department missions. We are now analyzing these information requirements to determine common interagency interest in the same or similar information. Each of the agencies will have access to the data without the necessity of establishing separate systems. Coordination among and between agencies is essential so that each agency's needs are satisfied in a way that is cost effective and consistent with the security requirements which must be placed on some data. Agreement on terms and definitions, and standardized procedures for data collection, access and usage will be established. As this effort proceeds, the resulting data bases which are computerized (and not all of them will be) will be located at the major computer installations.

Computer Security. The computer security plan is almost fully implemented. It covers physical security for computer facilities and data safeguards.

ADP Procurement. All major leased systems which were formerly rented from original-equipment-manufacturers have now been replaced with systems leased from third-party vendors. Savings to the Department resulting from these actions now exceed \$700,000 annually.

Management Improvement. Numerous management studies were conducted as follows:

Delegations of Authorities Review. A Departmentwide review of all authorities delegated by the Secretary of Agriculture was completed. As a result, overlapping functions have been eliminated, and the authorities and responsibilities of the general officers and agency and office heads within the Department have been streamlined and clarified. Procedures have been established for ensuring that delegations remain current.

Policy Implementation. Several studies throughout the Government and the Department led to the development of a control feedback system designed to assure that Congressional, Presidential and Departmental policies are implemented throughout the Department in an appropriate and timely fashion. This system will be implemented during this fiscal year (FY 1973).

Management Review Program. The Department, in line with the requirements of of OMB Circular No. A-44, has initiated a formal management review program. The objective is to enhance the management effectiveness of the Department.

Performance Measurement System. Based on a pilot effort conducted in the Food and Nutrition Service and with the assistance of OMB, the Department is developing the outline for a Performance Measurement System - designed to measure Departmental program manager's achievements in meeting established organizational goals. Preliminary design work on the system is underway and will eventually result in an automated system which will monitor program achievements and resource utilization for all levels of management.

Federal Assistance Review Program. OIS is coordinating the Department's participation in the Governmentwide Federal Assistance Review Program and an action plan to improve the delivery of assistance to recipients of USDA programs.

The program includes: (a) streamlining processing; (b) placing greater reliance on State and local governments and institutions, and on the private sector; (c) providing technical and managerial assistance to State and local governments; (d) decentralizing USDA organizations and decision making to the field; (e) improving governmentwide coordination of rural development activities; and (f) aligning field organizational patterns within USDA and to those of Federal Regional boundaries.

Management Assistance to States. Continuing to respond to inquiries from States, the Department has conducted an on-site Management Review of the animal health activities of the Kansas Animal Health Department. This review resulted in recommendations for the improvement of the management of the animal health activities of that State.

Management Review and Improvement -- New Expanded Program. The Department has initiated a new and expanded Management Review and Improvement Program. This program was established in accordance with guidelines in the Office of Management and Budget Circular No. A-44, revised May 1972. The FY 1972 Management Report (described below), combines four previous separate reports into one.

1. Priority Improvement Projects. In their FY 1972 Management Reports, USDA agencies and offices identified over 200 high-priority projects which were aimed at improving the effective delivery of the Department's services. Goals and objectives for FY 1973 were set by agencies for each project. During FY 1973, the Department will track and report progress toward these goals.
2. Financial Accomplishments and Plans. A summary of highlights in this area was compiled and incorporated into the overall report to OMB.
3. Automatic Data Processing Improvements. Automatic data processing improvements of Departmentwide scale and new or expanded applications by agencies were summarized for the Annual Report.
4. Management of Federal Reports. During FY 1973 efforts to reduce Federal reports and related paperwork are expected to yield savings of \$2,000,000.
5. Productivity Improvement. The Department was represented at all meetings and conferences of the Joint OMB/GAO/CSC Measurement Systems Study. This study centers on the development of productivity indices for the Federal sector.
 - a. During Phase I of this effort an inventory of all measurement systems employed by USDA agencies was prepared and submitted to a Joint Committee. It showed that approximately two-thirds of the Department's employees are covered by one form of measurement or another. In Phase II of the Study, the Department selected four agencies whose systems provide substantial input/output data. The data was analyzed by a Joint Project Team, and productivity indices released. These indices shows a productivity gain of better than 10% from FY 1967 through 1971.
 - b. In Phase III of this study, the Committee will extend the coverage to a larger section of Federal employment, to refine the indices, and to explore the use of total-factor productivity measurement. This Department is one of four that is experimenting with total-factor productivity.
6. Cost Reduction. In the Cost Reduction section of the Annual Report the Department reported over \$68.7 million savings from FY 1972 actions.

Personnel Administration

The Office of Personnel provides general liaison, direction, leadership, and coordination of the personnel management program of the Department. This program includes organization, classification and standards; salary and wage administration; employment and manpower planning; personnel and records security; standards of employee conduct; discipline; employee relations; appeals; employee development; program evaluation; health, safety and welfare; incentive awards; labor-management relations; personnel legislation; employee fringe benefits; equal employment programs; and other related personnel activities. The Office promulgates Departmental policies and procedures relating to these functions. The operational phases of this program have been substantially delegated to the agencies. A systematic review is conducted to measure its effectiveness in serving the agencies' personnel management requirements. Among the significant accomplishments during fiscal year 1972 were:

Reorganization of the Office of Personnel

On September 21, 1971, the Secretary of Agriculture approved an "Action Plan: Report of the Personnel Policy Evaluation Task Force." This plan stressed the need for more staff work and less operating or processing activities in the Office of Personnel. To respond to the objectives of this plan, the Director of Personnel examined the functions, operations, and manpower resources available to determine the changes needed in organization, assignment of functions and allocation of manpower resources to better serve the total personnel management needs of the Department. As a result, three staff groups were established in lieu of six of the seven divisions. These are identified as Employment and Program Coordination Staff; Program Development and Evaluation Staff; and Security and Operations Staff. The function of the seventh division (Employee Appeals) was transferred to the Office of the Director. The intent of these changes was to make it possible for the Office to be in a better position to provide the policy and program development, evaluation and staff assistance for which the Office of Personnel is responsible.

Labor-Management Relations

Thirty-seven recognitions covering 4,070 employees were issued to labor organizations during the Fiscal Year as a result of employee elections certified to by the Assistant Secretary of Labor. This represented a 44 percent increase in the number of units, bringing the total to 122. The number of employees represented by labor organizations increased 26 percent to a total of 20,001.

A three-day training course aimed at developing greater labor relations expertise in the supervisory and managerial ranks was presented in Washington and at six field locations. In total 757 supervisors and managers completed the course.

The issuance of a new Executive Order on Labor-Management Relations in August 26, 1971, required close liaison between the CSC, the Office and the Agencies to assure uniform application of the changes involved.

Continuing consultative relationships were maintained with the National Association of Federal Veterinarians and with the Organization of Professional Employees of the Department of Agriculture.

The Department participated to a significant degree in projects conducted by the CSC in respect to scope of bargaining and the impact of national exclusive recognition of the management process.

Equal Employment Opportunity - Agencies were given continuing guidance in the preparation of affirmative action plans for achieving Equal Employment Opportunity. Their progress was monitored through semi-annual and special reports.

Emphasis was put on the implementation of the President's Sixteen-Point Plan for the Spanish-Speaking. A special program for increasing the employment of Spanish-Speaking was distributed to the Agencies by a Secretary's Memorandum. Work began to improve this program using the advice of the Cabinet Committee on Opportunities for the Spanish-Speaking.

A program to increase the number of women in grades GS-13-15 was conducted during the year.

The Department's overall EEO effort is continuously evaluated using narrative and statistical reports. Particular attention is given to complaints alleging discrimination because of race, color, religion, sex or national origin.

Employee Appeals - Employee appeals, because of adverse action, classification, grievance and complaints of discrimination increased during the fiscal year. A total of 265 employees filed appeals or had appeals pending during the fiscal year; 188 were decided or withdrawn, 9 were returned to the agency and 68 remained pending at the close of the fiscal year. Hearings were held in 41 cases. In addition, the Office participated in 158 cases appealed to the Civil Service Commission.

Of the 265 appeals, 50 involved adverse actions more severe than a 30-day suspension, 29 suspensions of less than 30 days, 62 EEO complaints, 33 classification, 4 performance rating and 87 grievances and miscellaneous complaints. The agency action or decision on adverse action or classification cases was affirmed in 50 cases, modified in 1 case, reversed in 9 cases, 4 were withdrawn by the agency or the employee, and 10 remained open.

Complaint Office - The activities of the Complaint Office remained stable during the year and covered the full range of personnel matters. A total of 62 complaints covering a variety of matters were significant enough to require a report, counselling and/or explanation of appropriate regulations or procedures to the complainant.

Program Development and Evaluation Staff

Program Development - The Personnel Policy Evaluation Task Force, established September 1971, made more than 87 recommendations covering all aspects of personnel management. This Staff is providing leadership and coordination in implementing the Task Force's recommendations. Changes in Department policy and operations were affected. Agency actions related to the Task Force's recommendations were evaluated. A detailed review was made of the effectiveness of the current structure of the Office of Personnel with respect to the role recommended by the Task Force.

Program Planning - A new system of annual personnel management work plans for the Office of Personnel and for Agency personnel offices was initiated. A group of high priority personnel management developmental projects were identified. The testimony of the Chairman, U.S. Civil Service Commission, House of Representatives on March 2, 1972, and the recommendations of the Personnel Policy Evaluation Task Force were considered in identifying high priority projects. The new planning system concentrates on ensuring that developmental efforts in the Office of Personnel and Agency personnel offices are consonant with the goals of the Civil Service Commission and the Department.

Personnel Management Evaluation - As recommended by the Personnel Policy Evaluation Task Force, the Office of Personnel has assumed a more substantive role in providing leadership for personnel management evaluation in the Department. An internal evaluation system is being developed. Guide lines and standards for Agency evaluation efforts will be established. In determining its role in personnel management evaluation, that Staff will structure its activities so as to complement rather than duplicate evaluation activities currently carried out by Agencies and by the Civil Service Commission.

The Department has continued to work with the Civil Service Commission on activities related to a nationwide evaluation of personnel management in USDA conducted by the Civil Service Commission. Accomplishment reports on compliance with Civil Service Commission action plans were evaluated and needed follow-up items were identified. The Office will carry-out, follow-up, and close-out activity on these items during the next year.

Organization Planning Control - Office staff members participated in the planning, development, review, and authorization of major reorganizations within the Department and continued to provide advice and counsel concerning reorganizations to Agencies on request and evaluated Agency reorganization and staffing proposals requiring Departmental approval. The following reorganization proposals were reviewed, revised when necessary, and approved:

- (1) Overall Agency reorganizations in the Rural Electrification Administration, Farmers Cooperative Service, Federal Crop Insurance Corporation, and the Export Marketing Service.
- (2) Forty (40) reorganizations of subordinate units within Agencies.

Position Management and Average Grade - The Department continued its effort to improve its position management and to lower its average grade.

A new management information system is currently being developed by the Department. This system will enable managers to carry out their position management responsibilities more effectively by providing them with concise, but comprehensive and current information concerning significant aspects of the organization and staffing status and plans of subordinate units.

Legislation - A system is currently being developed to establish priorities for legislation needed to improve the personnel management program of the Department and its Agencies.

Special Studies - Reviews were made of the current level and quality of the activities of USDA Agencies in the areas of position management and staffing information systems. These studies were made to develop improved systems in the areas concerned. Similar studies in other areas will be made during the next year.

Employment and Program Coordination Staff

The following reports were prepared for publication:

Manpower Data - The eighth report in the area of manpower data for planning purposes was issued.

Leave Analysis - The yearly analysis of use of Annual and Sick Leave was published.

Statistical Summary of Employment - The quarterly report of employment by pay plan, agency, geographical area and trend of turnover was changed to semi-annual (June and December).

Occupational Distribution of Full-Time Employees - The recurring distribution of employees by occupational series, geographic location and grade was published as in the past. This year a complete break-out of the wage system was possible indicating leaders and foremen.

Minority Report - The second report on planning in minority employment was developed and published. This issue included accession, separation, and promotion rates as well as a geographical, occupational and general minority population distribution by agency.

Women's Report - A report on women in the Department patterned after the minority report was prepared. This shows general full-time distribution by grade and sex as well as separations and accessions by sex and grade.

In addition, the following reports were prepared:

Wage and Salary Distribution Report
Geographic Distribution Report
Distribution of Personnel by Activity
Monthly Retirement Report
Monthly Report of Federal Civilian Employment
Displaced Employee Report
Annual Review of Special Salary Rates
Career Review Index Listing
Quarterly Minority Report
Annual and Semi-Annual Minority Reports
Occupational and Distribution of Minority Groups
and other special reports as required

Personnel Statistics Maintenance and Improvement - Accident reporting and training statistics of the Department were automated. A major review was made of the data in the personnel statistics system to make certain that all data was accurate. The Department modified its system and submitted the required data to construct the Civil Service Commission Central Personnel Data File. Worked with the Civil Service Commission on the development of the Federal Personnel Management Information System.

Pay Administration - The Office continues to provide advisory and consultative assistance to the agencies on pay matters. Participated as a member of three interagency workgroups dealing with various aspects of pay administration, i.e., overtime for time spent travelling, true time and a half for certain non-supervisory employees not presently receiving true time and a half for overtime, and regularly scheduled overtime for those employees receiving an annual percentage premium for administration, finally enacted as P.L. 92-194, 12/15/71, which provides for overtime pay to part-time and intermittent employees for hours of work in excess of eight in a day.

Examination and Employment--Manpower Planning - Manpower needs and planning are related to changes in program objectives through the programming, planning and budgeting process. Projections of recruitment needs in professional, technical and administrative areas are made available to College Placement Directors, members of the Joint Committee on Land-Grant Colleges, State Universities and others interested in job openings and changes in occupational demands and matters in the Department.

GRAD--Graduate Resumé Accumulation and Distribution - The Department renewed its agreements to participate in the GRAD system, a computerized job matching system, sponsored by the College Placement Council. The system searches for and finds qualified college-level applicants to meet specialized needs.

Executive Selection and Development - Guidelines for Executive Selection and Development of high potential candidates have been initiated based on the instructions originating with the Office of Management and Budget and the Civil Service Commission. Objectives of Action Plans for Executive development are:

- Engage career executives in planned developmental experience.
- Systematically identify, develop, and assign individuals with high potential for career executive positions.

- Plan, program, and budget for these developmental activities.

During the past Fiscal Year 1972 the Department has reviewed 900 requests for prior approval of key positions. There were 875 cases approved in this period. In addition there were 84 supergrades or equivalent positions requiring extensive fact finding and negotiations with the Civil Service Commission.

Intergovernmental Personnel Act of 1970 - As of July 1972, the Department had entered into 68 IPA agreements with State, Local Governments, and Institutions of Higher Education. These agreements have been made in the areas of meat inspection and grading; forestry, conservation, and ecology; administration; economics and statistics; and agriculture science and research.

Merit Promotion Program - Increased use is made of Departmentwide Summary Vacancy Announcements. Summary listings are consolidated, reproduced, and distributed on a weekly basis. Special emphasis is given to the matter of informing candidates for a job of the outcome of the promotion action. Suggested guidelines for keeping employees informed of the outcome of personnel actions were developed.

Women in High Level Positions - In spite of considerable turnover, primarily through retirement, of women in GS-13-15 level jobs, the number of women serving in these grade levels increased from 219 as of May 15, 1971, to 240 as of June 30, 1972. Special emphasis on hiring and developing and promoting women will be continued under the Department's program.

Occupational Standards - Development work was done on new or revised GS series standards. The Office participated with the Oliver (CSC) Job Evaluation and Pay Review Task Force in conducting studies, developing work papers and the trial application of several proposed evaluation systems. This involved the assignment of individual staff members to work on various Task Force proposals. The Office will continue to work on the test and implementation program of the factor ranking techniques with benchmark positions as proposed by the CSC.

Special Hiring and Development Programs

Summer Employment Programs

Nationwide programs in the Department include the Summer Aid Program, the Summer Employment Examination Program, the Federal Summer Intern Program, the Junior Fellowship Program, the employment of faculty members, and other Merit Summer Staffing Programs.

Brochures were developed to guide supervisors of each of the several categories of employees on the nature and requirements of each of these special summer programs.

The Secretary set a goal of hiring at least 2,077 youths under the 1972 summer employment programs for economically and educationally disadvantaged youth. As of the end of July, the Department had 2,977 on the rolls, including 1,800 Summer Aids, 1,051 Stay-in-School employees, 126 Federal Junior Fellows.

Other summer employees on the rolls as of the end of July were:

Federal Summer Interns	26
Summer Employment Examination	576
All Other	6,777

As a part of the evaluation of this year's summer employment programs, at least ten percent of all summer employees will be surveyed. Analysis of this information will be used to further refine the program.

College Recruitment and Relations - A Departmental pamphlet on Cooperative Education and other student employment has been developed and 45,000 copies have been distributed. Initial steps have also been taken to update the Department's publication Profiles. Efforts to assist the Department's Liaison Officers at the 1890 Land-Grant Colleges continues. The Department hired twelve faculty members for summer employment including nine from predominately minority schools.

USDA-NASULGC Joint Committee for Government Education - In March 1972, the Joint Committee sponsored a program for the Deans of Resident Instructors of the Colleges of Agriculture. The purpose of the program was to inform the Resident Instructors of Federal efforts that have a bearing on their work in the Universities. Speakers were obtained from The White House, Civil Service Commission, Environmental Protection Agency, Health, Education and Welfare, USDA, Department of Labor, Federal Interagency Committee on Education, and several Universities.

Economic and Educational Opportunity Programs - The Department participated in various special economic and educational opportunity programs as follows: 5,444 participants in the Neighborhood Youth Corps; 127, Vocational Work Study; 1,285, College Work Study; 224, Adult Work Experience; 135, Manpower Development and Training Act; 15, Job Corps; and 844 in Operation Mainstream; 9, Work Incentive Program (WIN). In addition, 357 handicapped placements were made in the Department.

Youth Program - A significant part of the Department's report to the President on youth programs covered the personnel management effort. Highlights included were: (1) the involvement of high level management to increase opportunities for faculty and students to become familiar with Government and USDA; (2) assistance to the 1890 universities in curricula development; (3) better methods of recruiting, training, and utilization of young workers; and (4) improved communications and reporting systems.

Public Service Careers - The Governmentwide goal is to hire and train PSC trainees through use of the Worker Trainee Examination and to provide training to lower level employees to help them qualify for promotion. The Department entered into agreement with CSC to employ 350 at the entry level and 82 at the upgrade level. By the end of the fiscal year of operation the Department had hired 214 at the entry level and 74 at the upgrade level.

Management Intern Program - The Department continues to participate in the MI Program. Four Management Interns were hired and seven Department officials served as oral interviewers for the Civil Service Commission.

Central Referral - Job inquiries continue to be handled at a central point. The workload increased during the fiscal year as shown by the following comparative data:

	<u>FY 1971</u>	<u>FY 1972</u>
Replies to correspondence from Congress and other high level officials	710	736
Letters answered from the general public	5,500	6,264
Walk-in interviews	4,100	5,000

Employment of Vietnam Era and Other Veterans - The Department continues to emphasize the objectives of the President's Program (EO 11598) with respect to the hiring of veterans, especially Vietnam Era Veterans. During the period August 1971 through March 1972, there were a total of 15,000 hires made where the appointment lasted thirty days or more. Of these, 6,000 involved veteran preference appointments. Although 40% of these hires represent veteran preference only 2.6% are Vietnam Era Veterans. Renewed effort to employ Vietnam Era Veterans is being undertaken.

Performance Evaluation System - The Departmentwide performance evaluation system continued towards implementation. Primary activity during FY 1972 has been directed towards developing the operating procedures for computer input and defining the output requirements, design of the forms to be used and developing a programmed training package for employees and supervisors. These efforts will be completed by the end of the first quarter of FY 1973 and computer prepared performance rating forms are scheduled for production in that quarter and will affect performance ratings beginning the first pay period in January 1973.

Skills Inventory System - The Department continued development and use of the Skills Inventory System. There are approximately 25,000 USDA employees in this system and it is being evaluated for a possible increase in the coverage.

Security and Operations Staff

Security and Employee Conduct - On March 10, 1972, Executive Order 11652 "Classification and Declassification of National Security Information and Material" was issued. This required a revision of a substantial portion of the Records Security Regulations, which is in process.

A major revision of the "Penalty Guide" was undertaken and is expected to be published as an appendix to the Department Personnel Manual, and a new Department wide Security Debriefing Statement (AD-491) was developed and stocked.

Other comparative workload figures show:

	<u>1971</u>	<u>1972</u>
Security Clearance Actions	1299	785
Job Corps Cases Evaluated	17	2
Training Act Clearances	423	249
Clearance Considerations for Foreign Travel and International Conferences	925	1239
Security Considerations of FBI Reports	164	322
NAC&I's Transmitting Investigative Reports and/or Adverse Results	368	633
OIG Reports Evaluated	362	395
Post Audit of Disciplinary Actions	362	137
Prior Approval Actions Reviewed	1112	875
Advisory Committee Checks	325	445
Review of Conflict of Interest Forms	289	289

Training - The Office conducted eleven 5-day Seminars in Executive Development involving 373 USDA executives; seventeen 5-day Seminars in Middle Management with 469 USDA participants; and conducted nine 5-day courses of Problem Solving and Decision Making (Kepner-Tregoe) for 198 Department middle and upper level managers.

The Office coordinated participation of 150 USDA employees in the CSC Executive Seminar Centers, coordinated Department participation at the Federal Executive Institute for 24 top level executives; coordinated USDA participation in 8 special long-term training assignments, and approved 3 applications for foreign training assignments.

In cooperation with the USDA Graduate School, the Department implemented a supervisory training package "Success Oriented Supervision" which may be used as a self-instructional training course for USDA employees located in isolated areas.

The Office coordinated the establishment of a Department Selection Panel for Special Long-Term Training Programs.

Seminars in Middle Management (SIMM) was redesigned and structured to satisfy 40 hours of supervisory training as required by the Civil Service Commission.

Civil Rights Training - A Departmentwide "Compliance Review Training Course" was designed and implemented for the training of USDA civil rights compliance officers.

A task force of Department training officers identified course content for a standard Departmentwide "Continuing Civil Rights Training Course". The Department has moved forward with the development of the training program with implementation expected during FY 1973.

Safety - Initiated Departmentwide accident and employee injury reporting system utilizing computer storage and manipulation of data. This system is now being refined to produce necessary reports, to furnish accident prevention information, and to identify problem areas.

Participated directly in activities of the Federal Safety Advisory Council.

Cooperated with USDA Task Force on Safety in Agriculture.

Reviewed the overall USDA employee safety and accident program jointly with Office of Safety and Health Administration.

Incentive Awards - Benefits to the Government in FY 1972 resulting from employee suggestions and special achievements were valued at \$5.6 million. Recognition was granted in the form of a cash or honorary award to 4195 individuals or working units. In addition, 2432 employees received an extra step increase in pay in recognition of high quality performance.

Communications and Publications - The number of personnel issuances prepared in final form, cleared with appropriate staff offices and issued were:

<u>Kind of Issuance</u>	<u>Number Issued</u>	
	<u>1971</u>	<u>1972</u>
Personnel Bulletins	271	275
Personnel Letters	29	24
DPM Amendments	14	9
Personnel General		
Subject Issuances	32	31
Secretary's Memoranda	15	31

Health - Five health units are maintained in the Washington Metropolitan area: One in the South Building of USDA and one in the GHI Building, Washington, D. C.; two in Beltsville, Maryland; and one in Hyattsville, Maryland. During FY 1972 the following service was provided:

44,151 employees were seen for emergency care for accidents or illnesses.

5,397 immunizations were given: Influenza (2797) - the rest were for workers with special hazards or who were travelling overseas and included typhoid, smallpox, cholera, tetanus, plague, and gamma globulin.

1,703 screening tests were performed for diabetes, tuberculosis, glaucoma, or visual defects.

2,523 pints of blood were collected for the American Red Cross.

4,563 employees were counseled by the nurses on job related problems.

In addition, the Department cooperated with the Prince Georges County Health Department in providing a Mobile Unit for chest x-rays. 600 employees participated in this.

The Department also cooperated with the Washington Cancer Society in making available to employees films on different types of cancer and danger signals. The Washington Heart Society provided films which were shown on the subject of heart disease and how this disease is affected by diet, smoking, etc.

During the year a new Health Unit was equipped and opened in the new Group Hospitalization Building at 500 12th Street, S. W.

USDA 1972 Preretirement Planning Seminar - A five session Preretirement Planning Seminar for employees in the Washington, D. C. metropolitan area was conducted during the year. The seminar was designed to help employees plan their retirement by participating in a program which featured leading experts discussing such topics as Social Security, Medicare, Retirement Benefits under the Civil Service System, Legal Planning, and Health Aspects of Retirement. The seminar generated an interested and responsive audience totaling approximately 350 employees at each session.

Regulatory Hearings and Decisions. This activity includes the work of the Office of Hearing Examiners and the functions of the Judicial Officer and his staff.

The Office of Hearing Examiners holds hearings, issues recommended decisions, and performs related duties as required by the Administrative Procedure Act, (7 USC 551 et seq.), and applicable statutory provisions, regulations, and rules of practice.

The table below shows the number of hearings held by Hearing Examiners (now Administrative Law Judges) during the past five fiscal years under the various acts.

	1968	1969	1970	1971	1972
<u>Agricultural Marketing Agreement</u>					
Act, 1937	65	45	51	41	40
Packers and Stockyards Act	26	13	15	9	13
<u>Perishable Agricultural Commodities</u>					
Act	4	3	4	6	-
Commodity Exchange Act	5	4	3	4	9
Sugar Act	3	4	4	3	2
Potato Research & Promotion Act	-	-	-	3	-
Tobacco Inspection Act	1	1	6	3	2
Veterinary Accreditation under ARS	-	-	-	4	-
Laboratory Animal Welfare Act ..	-	-	-	1	-
<u>Federal Insecticide, Fungicide &</u>					
<u>Rodenticide Act</u>	-	-	1	3	-
Federal Meat Inspection Act	-	1	-	-	-
Federal Animal Quarantine Laws .	-	1	-	-	-
<u>Section 22, Agricultural Adjustment</u>					
Act of 1933	-	1	-	-	-
Adverse Personnel Action Appeals	-	5	5	8	29
	104	78	89	85	95

The Judicial Officer serves as final deciding officer, in place of the Secretary, in regulatory proceedings of a quasi-judicial nature where the applicable statute requires a hearing. These include cases in which a Hearing Examiner files a recommended decision and also reparation proceedings under the Perishable Agricultural Commodities Act and the Packers and Stockyards Act which are not subject to the Hearing Examiner provisions of the Administrative Procedure Act. Exceptions to a Hearing Examiner's recommendations may be filed by any party to the proceeding and oral argument is available before the Judicial Officer before the preparation and issuance of the final decision and order.

The Judicial Officer acts directly without reference to a Hearing Examiner upon applications to dismiss petitions and applications for interim relief by petitioning handlers under section 8c (15) (A) of the Agricultural Marketing Agreement Act and upon stipulations for consent orders under the Packers and Stockyards Act, the Commodity Exchange Act, the Perishable Agricultural Commodities Act and the Laboratory Animal Welfare Act. The Judicial Officer also rules directly upon matters arising in proceedings such as motions to dismiss that are certified by the Hearing Examiners without recommendation.

A comparison of the number of decisions and orders issued under the various acts is as follows:

<u>Laws Involved</u>	<u>Fiscal Years</u>				
	1968	1969	1970	1971	1972
Agricultural Marketing Agreement Act, 1937 --	13	15	27	44	23
Commodity Exchange Act -----	11	14	11	11	16
Grain Standards Act -----	3	-	-	1	-
Packers and Stockyards Act, 1921 -----	187	205	209	190	210
Perishable Agricultural Commodities Act -----	411	447	464	517	449
Laboratory Animal Welfare Act, 1966 -----	-	1	5	5	4
Virus-Serum-Toxin Act -----	-	-	1	-	-
Insecticide, Fungicide & Rodenticide Act 1/ -	-	-	-	1	-
Total --	625	682	717	769	702

1/ By delegation from Environmental Protection Agency, 35 F.R. 19714 (December 29, 1970)

The Hearing Clerk. In addition to the usual work of the Hearing Clerk in handling the pleadings, hearing records, etc., under the statutes referred to in the table above, and several other programs, there was an increase in the number of proposed changes in rules, regulations, policies, etc., for which Department agencies sought comments from those concerned. Thousands of comments were received and filed by the Hearing Clerk.

Equal Opportunity

An Office of Equal Opportunity was established November 16, 1971. The Office serves as the Secretary's staff office responsible for the development and enforcement of the Department's equal opportunity policies and programs. This includes those responsibilities as required by the Civil Rights Act of 1964 and subsequent Executive orders, along with enforcement of the contract compliance requirements of Executive Order 11246 and the EEO requirements of Executive Order 11478. Current activities include:

Evaluating agencies annual participation data by comparing reported participation by ethnic groups with the eligible population. Agencies use these evaluations to identify trends in minority participation as a basis for making needed adjustments in their programs.

Assisting agencies in establishing a participation reporting system which delineates eligibility data and base data from which progress can be measured in serving all ethnic groups.

Developing a system to more closely monitor plans by agencies to allocate program funds or benefits in a planned and directed manner toward minority beneficiaries and to measure achievement against the agencies' stated goals.

Initial development of an automatic data retrieval system for statistical information received from compliance review reports and special progress reports from contractors.

Preparation and analysis of data to re-evaluate our total assignment of supply contractors to direct program impact towards facilities located in Standard Metropolitan Statistical Areas where a larger percent of minority persons reside.

Establishment of a base data system to identify and measure progress made by government contractors under the Department's compliance responsibility of Executive Order 11246.

Assist agencies in developing compliance review procedures; develop and appraise review forms and instructions; accompany agency reviewers in the field; assist Office of Personnel in development of training program for agency compliance reviewers.

Advise agencies on application of equal opportunity policy to specific program areas.

Handle complaints of discrimination in federally assisted and direct programs; review OIG investigation findings and agency inquiry reports; suggest necessary corrective action; prepare responses to complainants.

Examples of Recent Progress

All State Cooperative Extension Services were required to submit detailed Civil Rights Compliance Plans covering both employment and Title VI benefit programs, based on guidelines developed by the Department of Justice. These Plans, after review and approval by the Department are immediately effective and must be fully implemented by February 28, 1973.

A three day intensive training course on the art of making effective compliance reviews was given to personnel representing all program agencies in the Department. These people in turn are now conducting identical training sessions for the hundreds of field personnel in their respective agencies, who will actually make compliance reviews.

Publication of OEO Annual Report 1971. This report shows the Department's efforts and accomplishments in the following areas: (1) application of compliance and enforcement measures to assure equal access for all citizens to USDA programs; (2) evaluation of program participation data to monitor progress in the delivery of benefits to minorities; (3) review of employment practices of Government contractors to assure equal employment opportunity; and (4) rendering of assistance to disadvantaged small business firms seeking Government contracts so that minority-owned firms can become competitive. OEO's Annual Report for 1972 will be published around July 1, 1973.

During the period January through September 1972, onsite Contract Compliance Reviews were conducted at 623 supply contractors, 28 REA financed borrowers and 2 construction contractors. These facilities employed 203,596 persons at the time the reviews were conducted.

Written Affirmative Action Programs were received from 513 of the contractors (57 were not required to have a written program), with 284 acceptable.

As a result of the unacceptable programs 3 show cause notices were sent and various meetings were conducted with company officials to conciliate completion of those programs outstanding.

An ADP system has been established to measure progress made by government contractors under the Department's compliance responsibility of Executive Order 11246. OEO Forms have been created to collect the contractor's projected hires and promotions during the Affirmative Action Plan period. Upon expiration of the Affirmative Action Plan, the contractor submits his actual accomplishments during the previous period. The actual results are posted to the OEO Forms and processed through the ADP system. The ADP print-out reflects the projected goals and the actual accomplishments. Goals for minorities and females are listed separately and are broken down by race.

INFORMATION SERVICES

The Office of Information is the communications link between the Department of Agriculture and farmers, organizations, and institutions interested in agriculture, consumers, and the public at large. The Office provides a service to the Department and its constituent agencies--and to the ultimate users of agricultural information --by disseminating results of agricultural research and marketing, of trends in agricultural programs and policies, and of other equally pertinent subjects that are essential to carrying on the work of the Department. The Office of Information coordinates all information work in the Department; reviews for final clearance all information materials released to the public; and coordinates agricultural information on activities with those of other Federal and State agencies.

Current Activities: The work of the Office is carried on in the following areas:

Publications. Management of the Department's publications program, including policy review and clearance, printing, and distribution to farmers and to the public.

Current Information. Review and issuance of press, radio, television, and special reports materials containing timely agricultural and consumer information; compilation and publication of the Agriculture Yearbook; and providing essential information on the Department's policies and programs to USDA employees in Washington and the field.

Visual Information. Production, issuance, and coordination of use of exhibits, still photographs, art and graphics, and motion pictures in disseminating useful agricultural and consumer information.

The Office also cooperates with nongovernmental, industrial, and other commercial organizations and sources on information matters relating to the work of the Department.

Selected Examples of Recent Progress:

Publications. Continued attention to all aspects of publications work helped maintain economical yet effective support for Department programs during fiscal year 1972.

PUBLICATIONS REVIEWED.

	Fiscal Year <u>1971</u>	<u>1972</u>
New and revised manuscripts reviewed editorially for		
GPO printing	848	734*
Slight revisions and reprints reviewed (GPO)	314	319
Manuscripts reviewed for duplicating or printing at		
Department plant	<u>531</u>	<u>495</u>
Total number of reviews	<u>1,693</u>	<u>1,548</u>

PUBLICATIONS PRINTED (GPO).

New and revised publications to the printer	620	718*
Slight revisions and reprints to the printer	314	319
Other printing orders written and placed	<u>3,200</u>	<u>3,175</u>
Total printing orders	<u>4,134</u>	<u>4,212</u>

* Includes 203 major periodicals.

PUBLICATIONS DISTRIBUTED. While the distribution of popular publications decreased slightly, the overall distribution of publications dropped considerably. The large decline was due primarily to the decrease in FNS-Series publications on food programs published by the Food and Nutrition Service. Expanded farm programs in FY 1971 created a great increase in publications aimed at introducing programs to the public that year. The FY 1972 decline is partly a result of a return to more normal operations. In addition, changes in food stamp regulations and the School Lunch Program, involving several months of hearings, made it difficult to develop new publications or revise old ones on these subjects during FY 1972.

	<u>Popular 1/</u>		<u>Total</u>	
	Fiscal Year			
	1971	1972	1971	1972
	Numbers of copies (millions)			
Total stocks at start of year	7.9	8.9	34.8	32.3
New publications printed	2.1	2.4	18.9	15.8
Reprints printed	12.7	11.3	34.9	24.7
Total available for distribution	22.7	22.6	88.6	72.8
Stocks at end of year	8.9	9.1	32.3	24.7
Sub-total	13.8	13.5	56.3	48.1
Stocks disposed of by pesticide changes	.1	.4	.3	1.4
Total actually distributed	13.7	13.1	56.0	46.7

1/ Farmer's Bulletins, Home and Garden Bulletins, Leaflets

CURRENT INFORMATION

PRESS SERVICES. In an effort to improve services to minority media, Press Service established a new mailing list of 50 Spanish-language newspapers and magazines. Periodically we send them news and feature articles on various Department projects and programs of special interest to their readers. In addition, to strengthen liaison with the black press, twenty-two special features, illustrated with photographs, were sent to the black press. The features told of accomplishments by blacks and opportunities for blacks in the Department, and were in addition to our regular output to this media.

Continuing to serve their respective publics were:

Agricultural Briefs -- a monthly newsletter to 156 black newspapers, initiated in 1970 and tailored especially to the needs of this group.

Farm Paper Service -- with same-day answers to farm editors' written requests and immediate response to those queries that are telephoned. In addition this service provided the weekly Farm Paper Letter that highlighted USDA agricultural actions for 175 newspaper farm editors and 450 farm magazine editors on request. The Service also provided assistance to visiting editors who wanted interviews with USDA officials.

Food and Home Notes -- a weekly newsletter that told of USDA developments and actions relating to programs on food and nutrition, recreation and housing. Receivers were more than 375 radio, press and television writers, over 2,900 educators, nutritionists, and home economists and 2,200 Extension agents and staffers.

The number of press releases issued increased to 3,608, up 403 from the prior year. The number of reports issued (Fats & Oils, Agricultural Prices, etc.) dropped for the second year, to 793 from 882. Postings remained about the same, numbering 1,165. The increasing use of postings permitted savings in reproduction and mailing costs, yet continued to provide for wide dissemination by making these limited-interest stories available to the wire services.

RADIO AND TELEVISION SERVICE.

Besides the anticipated increase in requests for services by the broadcast media, demands during FY 1972 were stimulated additionally by increased public attention to environmental quality, foreign trade, increased incidence of livestock and poultry diseases (hog cholera, exotic Newcastle disease, etc.) and a change in Secretaries of Agriculture.

With demands for the Department's radio services (in four weekly programs) growing, when output of slightly over 2,000 reels of radio tape per week was reached, facilities were operated at top capacity.

The Department's weekly half-hour television programs produced in cooperation with station WRC-TV, Washington, rounded out its eleventh year on the air, telecast weekly by over 100 stations across the country. Production of videotaped featurettes produced in cooperation with WRC-TV continued at the rate of five per week, with more than 200 of these duplicated for circulation to over 300 stations each week. There was also a slight increase in the number of special releases on videotape and film in support of educational programs of the Agricultural Stabilization and Conservation Service, and the Animal and Plant Health Inspection Service.

Meanwhile, the production of slide sets for television in support of the Plentiful Foods Program and other material in English and Spanish increased slightly. Interest in the Radio Spot News Services continued to grow with many stations, and some newspapers, phoning the service daily for the latest USDA news announcements.

SPECIAL SERVICES. Activities that received particular information support during fiscal year 1972 includes:

The Farmer and the National Economy. The Office intensified its efforts to explain (1) the farmer's contribution to the Nation's economy; (2) how the farmer's efficiency has held down consumer food costs; and (3) the farmer's need for increased income. A major thrust was the development and distribution of a definitive new information piece, "Agriculture USA," which underscored the benefits consumers receive from an efficient agriculture and the fact that farmers are consumers as well as producers.

More than 24,000 individual requests have been processed for copies of the leaflet, designed as a companion piece to the more statistically oriented "Background on U.S. Agriculture." In addition, printing plates were made available to non-governmental organizations such as Kiwanis International, National Cotton Council, National Farmers Union, National Farmers Organization, and the Farm Bureau Federation. Tens of thousands of copies were distributed at State fairs across the country. Voice of America used the piece as an enclosure in responding to correspondence from overseas listeners. It was the basis of farm-oriented campaigns developed by advertising agencies and provided background data for newspaper columnists and magazine writers.

New Teaching Tool. To further pinpoint the farmer's contribution, the Department developed a slide set "The \$130 Billion Assembly Line," telling the story of the vast food pipeline between the farmer and the consumer. This teaching aid emphasizes the major importance of agriculture to nonfarm jobs, incomes and general consumer well being.

Fact Book of U.S. Agriculture. An extensive revision of this important handbook was completed in 1972. The 87-page booklet--a desk reference for reporters and editorial writers, farm organization leaders, and agribusiness managers--contains written and statistical thumbnail sketches of the entire range of the Department's activities and agriculture in general. Included are concise explanations of farm and food programs, the need for improved farm income, rural development, and forest and soil conservation management. Over 9,500 copies of the Fact Book have been distributed to information leaders since the new revision became available in March.

The Farmer and Lower Food Costs. The Department continued distribution of "Food Preview," a quarterly forecast of food supplies and costs. The "Preview" is sent to consumer groups, teachers, publications, and others comprising the mailing list of Service: USDA's Report to Consumers. In addition, requests for multiple copies of the "Food Preview" were received from libraries, educational institutions, and consumer education groups. It has been widely used by such groups as the White House Office of Consumer Affairs, the Virginia, Ohio, and other State consumer offices, and newspapers and syndicated columnists.

International Trade. For overseas audiences, the Department's information program continued to stress the concept that U.S. agriculture is a reliable, efficient producer. Domestic materials underscored the importance of farm exports to farm income, to the national economy, and to the U.S. balance of payments. Among the major activities in support of U.S. international trade were:

Press package. The Office developed and distributed two press kits providing in depth background material on agricultural trade between the U.S. and the European Community and on the potential importance of trade relations between the U.S. and the USSR. Both kits were widely used by the media. Hundreds of requests for copies were also received from private firms.

International radio program. The Office implemented a new weekly feature on the Voice of America's Breakfast Show which is reported to have the largest listening audience in international broadcasting. VOA solicited agricultural queries from its audience. The questions were answered by an Office Information Officer in a question and answer format. The sessions were taped and broadcast in more than 100 different countries.

Individual feature broadcasts. At the request of VOA, the Office helped develop 26 special half-hour radio programs on specific aspects of U.S. agriculture for world wide distribution in several different languages.

Feature stories for foreign press. More than 160 news and background stories along with 14 feature stories by USDA officials were provided to the U.S. Information Agency and its outlets in 105 countries. Specific feature stories were prepared for foreign publications including OECD's Agricultural Review. Schedules and background briefings on American agriculture were arranged for media representatives from Australia, England, Italy, Ireland, Japan, Brazil, and Germany.

Rural Development. Expanded efforts were undertaken to reach more of rural America with information about programs, to present to the business community the economic value of rural locations, and to alert the general public to the revitalized role of rural America in the economic and social fabric of our national life. The most significant programs include:

Direct press service for small town newspapers. A program to mail to 5,000 editors of small town daily and weekly newspapers was commenced. The editors were offered bi-weekly mailing of feature stories about economic growth rates in rural America, population trends, success stories from development projects, and other material illustrating the growth potential of rural America.

Catalyst. The Office continued to distribute "Catalyst," the 4-page monthly newsletter to 24,000 leaders of rural development programs in Federal, State, and local groups. The newsletter stressed the impact on local communities and government groups of current Federal programs.

Farm Safety. In a major effort to combat the high rate of accidents in rural America, a Departmentwide information program stressed safety not only in farm production, but in all other aspects of rural life. The 1972 farm safety campaign was conducted in cooperation with the National Safety Council, with a different theme stressed each month using press releases, radio spots, feature stories and picture stories.

Toward a Better Environment. "Response," the bi-monthly report on environmental action in agriculture, provides continuing information to conservationists and ecologists about USDA activity in environmental matters. It is circulated to 1,000 information and program leaders working with environmental programs.

Updated pesticide information. Some 150 publications were reviewed during the year to update, clarify, and provide the latest information to the general public on the safest and most efficient ways to use common pesticide compounds.

Animal Waste Symposium. The Department provided general information support for the first National Symposium on Animal Waste Management. The information efforts included followup to the farm press and to program leaders working to solve one of the major environmental problems in rural America.

Yearbook promotion. The launching of the 1972 Yearbook of Agriculture, "Landscape for Living," provided an opportunity for the Departmental spokesmen to reach a broad audience with the story of agriculture's contribution to a better environment for rural citizen and city dweller alike. The event was attended by leaders from the nursery and landscape trade, citizens groups and women's groups, conservation and gardening associations, and the general and trade press. All major magazines distributing home and garden information to the public were contacted as a result of the program, including such publications as McCall's, Readers Digest, Parade, Good Housekeeping, House Beautiful, and Family Circle.

Consumer Services. The consumer service program uses the complete range of information outlets to reach the largest audience possible: national magazines; major metropolitan newspapers; radio and television.

Copy Lines. This USDA feature service offers five or more articles bi-monthly to a distribution list of more than 500 magazine and newspaper feature editors, garden editors, columnists, and free-lance writers. Department activities which benefit consumers receive the most emphasis, including food and nutrition research, the Department's food aid programs, and the environment. During FY '72 Copy Lines received over 1,300 requests for prepared articles and also generated requests for exclusive help or answers to specific questions from the media.

Service: USDA's Report to Consumers. "Service" continued to be mailed to about 6,000 readers, by request only. Recipients include consumer writers and editors, officers of women's organizations, civic, consumer, youth and labor groups, trade associations, industry, and other persons who report to consumers. The newsletter went to every State and to major consumer groups in the country. Service stories have been reprinted or have served as sources for stories in major publications such as Good Housekeeping, Changing Times; numerous metropolitan newspapers such as the Washington Star-News, Louisville Courier-Journal, and the Salt Lake Tribune; and by syndicated columnists. The American Association of University Women sends the newsletter to each of its State program directors.

USDA Employee Newsletter. The Department's 80,000 employees need to be well informed about Departmental programs, affecting as they do, almost every aspect of the public's daily lives. A bi-weekly newsletter is provided employees with up-to-date information on such nationwide--and governmentwide-- programs as Federal Executive Boards, Federal Regional Councils, and the concept of Rural revenue sharing. As a result of changes initiated, the number of copies distributed has been increased by 20 percent, while greater efficiencies in production are holding total costs in check.

Working With Consumer Groups. The Department continued its work with consumer organizations in an effort to provide the general public with a greater understanding of services available. Among the more significant projects was a program for the newly elected officers of the 11 million-member General Federation of Women's Clubs. The program highlighted USDA developments in food and environmental research, two of several areas (others are nutrition, fabric, and food costs) in which agriculture's programs have been supplied through the GFWC. Other projects include assistance to the Virginia Citizens Consumer Council's multi-State consumer program for young people; assistance to consumer education programs for Spanish-speaking people in cooperation with educational institutions and consumer groups.

ARTS AND GRAPHICS. The number of jobs processed in 1972 numbered 2,011 as compared with 2,310 in 1971. Assistance was provided in the areas of program participation, agricultural outlook, rural development, pesticides, nutrition, agricultural economics, environmental thrust, food stamp program, foreign market development and recreation.

EXHIBITS. Emphasis was placed on exhibits at special events such as Transpo in Washington, D.C.; the International Plowing Contest at Mankata, Minnesota; and the Weather and Crop Centennial at the Smithsonian Institute. The design of permanent exhibits at information centers located on the National Forest and Research centers continued during the fiscal year. At international events, the Exhibits Service designed exhibits at the Madrid Livestock Show, the International Food Show in Amsterdam, and the Caribbean Food Exhibitions. The Exhibits Service commenced the designing of the Federal Bicentennial exhibition in Washington, D.C., to be located in the Great Hall at the Commerce Department.

The overall production and renovation of exhibits in Fiscal Year 1972, was slightly under the quota for 1971 as indicated in the following chart:

	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
New Exhibits Produced	63	56	52
Exhibits Renovated	107	119	78
3-D Visual Aids Produced	17	10	8
Exhibits Showings	181	193	125

MOTION PICTURES. The release of six new half-hour films on nutrition for the Extension Service accounts for this year's sharp increase in motion pictures produced in the 15-30 minute category. Expanded activity in the preparation of filmed television spots and featurettes (10 sec. to 7 min.) tended to off-set a decline in production of longer films in the one-half to one-hour category.

<u>Running Time</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
30 min. to 60 min.	1	3	0
15 min. to 30 min.	9	11	17
7 min. to 15 min.	9	9	9
2 min. to 7 min.	26	8	11
10 sec. to 2 min.	19	22	27

The film distribution activity was diminished during the year due to loss of critical personnel.

PHOTOGRAPHY. Continued public interest in Department environmental and nutritional activities is reflected in continued high distribution of slide sets and filmstrips with almost 10,000 copies of presentations sold to the public or to USDA field employees.

Seven presentations were produced.

Conservation or nutrition was the main topic of the 16 picture stories produced for distribution to news media and of the six series of matrices developed for distribution to approximately 315 newspapers.

Over 2,200 color transparencies were added to the Department's master color file, and approximately 300 requests were received from the public for material from it. About 900 requests were received for pictures from the Department's black and white picture file.

(b) Rural development grants and technical assistance

Appropriation Act, 1973	- -
Budget Estimate, 1974	<u>\$20,000,000</u>
Increase in Appropriation	<u>+20,000,000</u>

SUMMARY OF INCREASES

	1973	Increases	1974 Estimate
For grants and technical assistance author- ized by the Rural Development Act of 1972	- -	+\$20,000,000	\$20,000,000
Total available	<u>- -</u>	<u>+20,000,000</u>	<u>20,000,000</u>

PROJECT STATEMENT

Project	1972	1973 (estimated)	Increases	1974 (estimated)
1. Grants for community facilities	- -	- -	+\$10,000,000	\$10,000,000
2. Environmental quality cost-sharing and technical assistance	- -	- -	+10,000,000	10,000,000
Total available or estimate :	- -	- -	+20,000,000 (1)	20,000,000

- (1) An increase of \$20,000,000 for grants and technical assistance authorized by the Rural Development Act of 1972.

Need for Increase:

President Nixon, in his State of the Union Message on January 22, 1970, called for a national growth policy that would "...create a new rural environment that will not only stem the migration to urban centers but will reverse it".

The Congress, in enacting the Agricultural Act of 1970, endorsed the President's view and expressed the following policy in Title IX of that Act:

"The Congress commits itself to a sound balance between rural and urban America. The Congress considers this balance so essential to the peace, prosperity, and welfare of all our citizens that the highest priority must be given to the revitalization and development of rural areas."

On February 1, 1972, the President transmitted to the Congress the first Presidential Message in history on the need for a national program of rural development. The Message included the basic principles that should guide that program, and legislative proposals to improve the capability of the Federal Government in assisting rural areas develop.

By August 30, 1972, the Congress passed, and the President signed into law, the Rural Development Act of 1972. In his statement upon signing the bill into law, the President characterized the new Act as "...a significant first step in our determination to strengthen economic opportunity and community life throughout rural America."

The provisions of this Act, as amended by the Congress, are both complex and novel. They amend several existing laws and provide program authorities

that overlap and duplicate other authorities for existing programs, including those of HUD, SBA, EDA, and other Federal agencies. Consequently, the already difficult problem of coordinating Federal assistance to rural communities would be intensified if all of the new program authorities under the Rural Development Act of 1972 were simultaneously implemented on a nation-wide basis in all rural areas.

Furthermore, the increase in Federal budget program and employment levels required to fully extend all new programs under the Act to all rural areas immediately would be excessive under the current budgetary and fiscal situation.

To permit taking the "significant first step" called for by the President, and adhering to the principles of fiscal prudence and budgetary restraint required to avoid tax increases or excessive inflation, the FY 1974 Budget proposes a limited-scale rural development program designed to test new policies, procedures, criteria, and coordinating mechanisms.

Special FY 1974 Rural Development Program:

The Special FY 1974 Rural Development Program is designed to provide supplemental Federal assistance in a limited number of rural multi-county sub-State development districts, basically one for each State. To assure that rural development remains primarily a responsibility of State and local officials, and is responsive to the development opportunities, needs, and priorities as seen by local citizens, the special FY 1974 program will seek to minimize direction and control from Washington.

The multi-county development areas eligible for special assistance will be selected by the Governor or other official that might be designated by the State Legislature. At least one area will be selected in each State.

Local development opportunities, needs, priorities, programs, and projects will be set forth in comprehensive multi-county district plans for the entire area--developed by the local authorities in the area within whatever guidelines may be furnished by the State, if any.

On the basis of the locally developed plan, priority will be given for assistance under on-going regular Federal assistance programs, supplemented as necessary by increases proposed in the budget requests for the Department of Agriculture.

The supplementary funds will be available only in the multi-county areas designated by state authorities for assistance under the Rural Development Act of 1972. In addition to the \$20 million increase proposed under this account, other funds justified elsewhere in these Explanatory Notes include:

- \$200 million in guaranteed and insured loans for rural industrialization, to be administered by the Farmers Home Administration (see Volume II, Rural Development Insurance Fund)
- \$100 million in guaranteed or insured loans to rural communities for community facilities, to be administered by the Farmers Home Administration (see Volume II, Rural Development Insurance Fund)
- \$2.5 million for a rural development research program under Title V of the RD Act of 1972, to be carried out by the State Land-Grant University and other cooperating schools in the State (see Volume I, Cooperative State Research Service)
- \$2.5 million for a rural development extension program under Title V of the RD Act of 1972, to be carried out by the State Land-Grant University and other cooperating schools in the State (see Volume I, Extension Service)

In addition, \$345 million in insured loans will be available for community development facilities including water supply facilities. While available nation-wide, priority will be given to projects in these selected multi-county areas.

Plan of Work:

The increase of \$20 million requested for FY 1974 will be made available in the multi-county rural areas designated for supplementary assistance under the Special FY 1974 Rural Development Program for the following purposes:

1. Grants for community facilities (\$10 million) to public bodies for measures designed to facilitate development of private business enterprises, including the development, construction, or acquisition of land, buildings, plants, equipment, access streets and roads, parking areas, utility extensions, refinancing, services, and fees. Grant funds will be administered under the authority in Sec. 118(a) of the Rural Development Act amending Sec. 310B(c) of the Consolidated Farm and Rural Development Act. Grants under this appropriation will not be available for water or waste disposal systems.

Grant authorizations will be allocated to States by the Assistant Secretary for Rural Development. Community grant applications will be subject to approval by the State, within State allocations and where projects are included within approved comprehensive plans. The Farmers Home Administration, under authority delegated by the Assistant Secretary for Rural Development, will advance grant funds for approved projects.

2. Environmental quality cost-sharing and technical assistance (\$10 million) to agricultural producers and other landowners for annual and long-term cost-sharing on practices to abate or eliminate critical erosion, sediment, or environmental conditions originating on farm or other land, and having adverse community-wide effects.

Up to \$1 million of the \$10 million will be available for technical assistance to be provided by the Soil Conservation Service in the designated multi-county development areas, to the extent approved, and under authority delegated, by the Assistant Secretary for Rural Development. \$9 million will be available for cost-share payments in the designated multi-county areas, within State allocations to be approved by the Assistant Secretary.

Cost-share agreements will be made only for practices designed to meet critical environmental quality problems identified in area-wide comprehensive plans, and will be made under the authority contained in Secs. 201a and 605 of the RDAc of 1972.

(c) Working Capital Fund, Department of Agriculture

The Working Capital Fund is an operating fund without fiscal year limitation established by an appropriation of \$400,000 in the 1944 Agricultural Appropriation Act, (P.L. 78-129). This Fund finances by advances or reimbursements, the costs of certain centralized service operations in the Department of Agriculture. In accordance with the statute, activities are financed under the Fund only when approved by the Office of Management and Budget. Legislation is being proposed to authorize the appropriation of additional capital to this fund to cover its expanded activities.

Financial status of the Working Capital Fund is as follows:

	<u>June 30, 1972</u> <u>(Actual)</u>	<u>June 30, 1973</u> <u>(Estimate)</u>	<u>June 30, 1974</u> <u>(Estimate)</u>
<u>Assets:</u>			
Cash	-\$609,668	-\$609,668	-\$609,668
Accounts receivable	2,441,738	2,441,738	2,441,738
Office and printing supplies, and photocopy materials on hand	453,564	453,564	453,564
Reproduction and other equip- ment (net after depreciation)	978,292	889,655	804,243
Total assets	<u>3,263,926</u>	<u>3,175,289</u>	<u>3,089,877</u>
<u>Liabilities</u>	<u>1,900,184</u>	<u>1,811,547</u>	<u>1,726,135</u>
<u>Government Equity:</u>			
Initial appropriation (1944 Agri- cultural Appropriation Act)	400,000	400,000	400,000
Supplies and equipment transferred by USDA agencies	608,135	608,135	608,135
Retained earnings	355,607	355,607	355,607
Total Government Equity	<u>1,363,742</u>	<u>1,363,742</u>	<u>1,363,742</u>

Obligations by activities for the central services financed through the Working Capital Fund are as follows:

	<u>1972</u> <u>(Actual)</u>	<u>1973</u> <u>(Estimate)</u>	<u>1974</u> <u>(Estimate)</u>
<u>1. Supply and other central service programs:...</u>			
Central supply, reproduction and miscellaneous services	\$4,020,113	\$4,051,000	\$4,051,000
Centralized mail distribution system	385,008	429,330	429,800
Civil defense and defense mobili- zation programs	37,877	41,530	42,000
Management training programs	202,602	162,708	164,000
Management support service	26,763	753,755	800,000
Subtotal	<u>4,672,363</u>	<u>5,438,323</u>	<u>5,486,800</u>
<u>2. Photocopy and microfilming ser- vices</u>	<u>70,242</u>	<u>76,650</u>	<u>76,650</u>
<u>3. Motion picture, photographic and other visual information services program:</u>			
Motion picture, photographic, arts and graphics and exhibits services	2,573,238	2,393,190	2,399,534
Publication of Department periodi- cal "USDA"	37,244	42,000	42,000
Subtotal	<u>2,610,482</u>	<u>2,435,190</u>	<u>2,441,534</u>

	1972 (Actual)	1973 (Estimate)	1974 (Estimate)
4. <u>Central payroll, personnel and related services</u>	\$5,109,992	\$6,338,498	\$6,342,022
5. <u>Central voucher payment service</u>	473,983	2,738,734	5,136,396
6. <u>Management and ADP systems</u>	399,102	7,229,512	10,493,604
Total obligations	13,336,164	24,256,907	29,977,006

Responsibility for providing the central services financed through the Fund has been assigned as follows:

Office of Plant and Operations

Central supply services, including stationery, supplies, equipment, and forms.
Centralized mail distribution system.
Duplicating services, including printing, reproduction and photocopying, binding, addressing and mailing, and related services.
Automated mailing list is a system of list maintenance and label production.

Assistant to the Secretary for Intergovernmental Affairs

Provides administrative services and communication facilities for the Department's relocation headquarters, periodic civil defense exercises, and conduct of survival training courses.

Office of Personnel

Conduct of intra-departmental management training programs, including Seminars in Middle Management and Seminars in Executive Development and Kepner-Tregoe Training Programs.

National Agricultural Library

Supply photocopy and microfilm reproductions of library materials.

Office of Information

Motion and sound picture services.
Still photography services.
Arts and graphics.
Exhibits.
Publication of Departmental employee periodical "USDA".

Office of Budget and Finance

Operation of Department-wide centralized services for payrolling, personnel, and related services.

Operation of Department-wide centralized administrative voucher payment center.

Office of Information Systems

Provide an integrated management information system of automatic data processing facilities and applications within the Department.

Office of Management Services

Provide consolidated management support service to various Departmental organizations located in Michoud, Louisiana.

PASSENGER MOTOR VEHICLES

The Budget estimates for 1974 continue the authority to replace, if necessary, one automobile used by the Secretary and his staff.

As of December 31, 1972, only one Department-owned automobile was operated in the District of Columbia. In addition, ten vehicles are rented on an annual basis.

One of the rented vehicles is used by the Secretary of Agriculture, and the other vehicles are used on official business by the Under Secretary, the Assistant Secretaries, and members of their immediate staffs, as well as the heads and other responsible officials of Departmental staff offices.

OFFICE OF THE INSPECTOR GENERAL

Purpose Statement

The Office of the Inspector General was established by Secretary's Memorandum No. 1503 dated June 25, 1962, and No. 1524 dated December 21, 1962. The Office is responsible to the Secretary for internal audit and investigation of Departmental programs, and provides personal security to the Secretary. It works to assure that existing laws, policies and programs of the Department, and the intent of the Congress and the Secretary are effectively carried out on every level of administration. It assures prompt and appropriate corrective action in those instances where deviation from established law, policy, procedure, rules or regulations may have developed. It conducts internal audit and investigative activities within the Department and coordinates and correlates them with various investigative agencies of the executive and legislative branches of the Government.

These audit and investigative services are carried out by the headquarters staff, 7 regional offices and suboffices. The regional offices are located in New York, New York; Hyattsville, Maryland; Atlanta, Georgia; Chicago, Illinois; Temple, Texas; Kansas City, Missouri; and San Francisco, California.

Available Funds and Man-Years

1972 and Estimated, 1973 and 1974

Item	Actual		Estimated		Budget Estimate	
	1972		1973		1974	
	Amount	Man: Yrs	Amount	Man: Yrs	Amount	Man: Yrs
Office of the Inspector General	\$18,431,000	:857	\$18,751,000	:869	\$18,751,000	:857
Obligations under other USDA appropri-						
tions:						
Office of the General Counsel:						
Stenographic and photocopying services..	7,064	--	8,800	--	8,800	--
Farmers Home Administration:						
Photocopying services	1,411	--	1,600	--	1,600	--
Food and Nutrition Service:						
For purchase of food stamp coupons from:						
local banks needed in investigation						
activities	1,728	--	2,000	--	2,000	--
Total, Agricultural Appropriation Bill	18,441,203	:857	18,763,400	:869	18,763,400	:857
Other funds:						
Reimbursable audit or investigation						
services for other agencies:						
ASCS-State and county office activ-						
ities incident to operations of the						
commodity loan programs financed by						
service fees or charges from producers:	212,000	:10	223,660	:10	223,660	:10
Agricultural Marketing Service:						
-Inspection and grading activities						
financed by reimbursements	245,668	:12	214,500	:10	214,500	:10
Department of Labor - Administration of:						
job corps civilian conservation						
centers	66,035	:3	15,700	:1	15,700	:1
Total, Other funds	523,703	:25	453,860	:21	453,860	:21
Total, Office of the Inspector General	18,964,906	:882	19,217,260	:890	19,217,260	:878

OFFICE OF THE INSPECTOR GENERAL

	Office of Inspector General	Transfer from Food and Nutrition Service	Total
Appropriation Act, 1973	\$14,519,000	\$4,250,000	\$18,769,000
Budget Estimate, 1974	14,501,000	4,250,000	18,751,000
Decrease in Appropriation	<u>-18,000</u>	<u>---</u>	<u>-18,000</u>
Adjustments to 1973 appropriation:			
Appropriation Act, 1973	14,519,000	4,250,000	18,769,000
Transfer to General Services			
Administration for space rental	-18,000	---	-18,000
Adjusted base for 1974	14,501,000	4,250,000	18,751,000
Budget estimate, 1974	<u>14,501,000</u>	<u>4,250,000</u>	<u>18,751,000</u>

PROJECT STATEMENT
(On basis of adjusted appropriation)

Project	1972	1973 (estimated)	1974 (estimated)
1. Internal audit and inves-			
tigation	\$17,990,599	\$18,751,000	\$18,751,000
Unobligated balance	440,401	---	---
Total available or estimate	<u>18,431,000</u>	<u>18,751,000</u>	<u>18,751,000</u>
Transfer to GSA	---	+18,000	
Total, appropriation	<u>18,431,000</u>	<u>18,769,000 a/</u>	

a/ Of this amount, \$450,000 has been withheld from use in 1973 principally from funds budgeted for travel.

STATUS OF PROGRAM

The Office of the Inspector General (OIG) is responsible for the internal audit and investigation activities of the Department of Agriculture, and for providing personal security to the Secretary. OIG was established to assure the Secretary of totally independent and objective Departmental audit and investigative service, including searching review and examination of the Department's programs and activities, and direct and coordinated reporting to responsible officials. Emphasis is on improved accountability for the Department's resources; increased effectiveness in meeting program objectives; and complete integrity throughout the Department's programs and personnel.

ACCOMPLISHMENTS IN FISCAL YEAR 1972

	<u>Audit</u>	<u>Investigations</u>	<u>Total</u>
Reports issued	2,938	3,672	6,610
Recoveries, savings, collections and erroneous payments reported	\$24,000,000	\$3,500,000	\$27,500,000
Indictments	--	223	--
Sentences	--	128	--
Suits filed	--	34	--
Judgments rendered	--	41	--
Fines levied	--	\$111,000	--

Examples of OIG Audit and Investigation Work in Fiscal Year 1972.

I. Agricultural Stabilization and Conservation Service (ASCS)

OIG made one nationwide program audit; one special study; 70 multi-state or statewide special audits; 19 audits of state office operations; 1,070 audits of county offices; and 43 audits of Commodity Credit Corporation operations at ASCS Commodity Offices, Data Processing Centers, and headquarters offices at Washington, D.C. Seventy percent of the county offices audits were done as part of statewide or multi-state reviews. The following are highlights of some of these audits.

A. Set-Aside Program

In 1971, farmers on nearly 2 million farms were paid about \$2.75 billion to take land suitable for growing wheat, feed grains, and cotton out of production and put it into conserving uses. To evaluate the administration of this program in its first year of operation, we selected 41 counties in seven States as the base for a "set-aside" program audit.

We found that some farms and parts of farms accepted into the program were ineligible because they were not suitable for growing the above crops, or they lacked required "set-aside" or other acreage. Also, some land was below productivity for the payments made or was not maintained in proper conserving uses. Further, we concluded that certain County Committees were too lenient in approving reductions in the amount of idle land (Normal Conserving Base) required for a farm to qualify for program payments.

As a result of our report ASCS provided for special employee training and stronger emphasis on land eligibility determinations for the 1972 program. ASCS also strengthened and reemphasized procedures to minimize unauthorized reductions in Normal Conserving Bases.

B. Audit of 1971 Maximum Payment Limitation (\$55,000)

Our audit, in 5 of the 33 States where farmers received more than \$55,000 in 1970 program payments, disclosed that farmers effectively avoided the 1971 payment limitation by changing or reorganizing their farming operations.

Without violating Set-Aside Program regulations, farmers formed partnerships, corporations and trusts, added tenants, changed leasing arrangements, and used other legal devices which permitted additional persons or entities to qualify for up to \$55,000 each in program payments. ASCS implemented OIG recommendations for the 1972 program by applying more restrictive and definitive regulations to changes in farming operations and eligibility of partnerships, corporations, stockholders, and others.

C. Special Study - Effect of Payment Limitation on the Set-Aside Program

Following the audit described above, OIG, and USDA's Economic Research Service, jointly studied the nationwide effect of the \$55,000 payment limitation; that study was made pursuant to Senate Resolution 153. OIG prepared the Department's report, issued to the Senate on March 14, 1972.

OIG's part in the study consisted of collecting, analyzing, and reporting data to show the extent of changes in 1971 farming operations by the 1,350 producers who earned more than \$55,000 in crop-reduction program payments in 1970. The study showed that 1,046 of the 1,350 producers made changes (as described in "B" above) in their farming operations. Because of these changes, additional persons or entities became "eligible producers" and thereby received about \$40 million in 1971 Set-Aside Program payments. The study showed that application of the payment limitation reduced total 1971 Set-Aside payments by only \$2 million below what the total would have been without the \$55,000 limitation.

D. Beekeeper Indemnity Payment Program

An audit survey requested by ASCS in three States and Headquarters, disclosed that improved procedures were needed which would help insure (1) beekeepers' claims for indemnity payments to be adequately supported, and (2) adequate inspection of losses before paying current claims.

Based on our audit survey and other information ASCS obtained, the Agency (1) revised forms and procedures for handling claims for loss of income (one beekeeper's pending claim was reduced from about \$800,000 to about \$450,000 by applying our recommended procedure), (2) now requires that trained ASCS personnel or State Apiarists verify bee losses, (3) reduced program payment rates, and (4) now requires beekeepers to periodically report the size of their operations to help assess the reasonableness of future loss claims, if any. In addition, ASCS has furnished State and county offices improved directions and guidelines for administering the program and determining reasonableness and eligibility of claims.

E. Program Participation by ASCS Officials

ASCS committeemen and employees must now report any farms leased to them so pertinent leasing arrangements can be reviewed and the lessors informed of potential ASCS program payments for their farms. This requirement resulted from OIG recommendations after we found that some ASCS personnel had leased farms from lessors not familiar with ASCS programs and the related payment benefits. The ASCS personnel received ASCS program payments disproportionate to the rent they paid.

F. Audits of CCC Operations

The following are some of our findings at Commodity Offices, Data Processing Center, and Washington ASCS Headquarters.

1. Collections from many sales of grain were not received promptly from brokers and buyers. This limited Commodity Credit Corporation working capital, and caused additional borrowing from the Treasury at an estimated interest cost of about \$164,000 annually. ASCS now charges 6 1/2% interest on delinquent payments.

2. ASCS overpaid for storage of flaxseed. This finding caused the Commodity Office to recover about \$77,000 on FY 1971 contracts and to save about \$65,000 on FY 1972 contracts.
3. Cotton merchants--in claiming reimbursements from CCC for compressing cotton bales--overstated costs. The Commodity Office acted to recover \$37,000 in overpayments.

II. Farmers Home Administration (FHA)

OIG made 400 county office audits during FY 1972. Problems disclosed by our audits of Rural Housing and related loans included:

- A. Deficient water supplies and sewage disposal systems.
- B. Deficient subdivision planning and development.
- C. A need for additional staff and technical skills.

During the year, FHA made substantial progress in action in the recommendations in our FY 1971 nationwide audit of Rural Housing and related loans. Some of these actions are:

- A. Making organizational changes to enable the National Office to better monitor and currently evaluate State and county office program performance.
- B. Doing more to meet the needs of low-income families for safe, decent, and sanitary housing.
- C. Strengthening training efforts, including establishment of a new training center at Norman, Oklahoma.
- D. Establishing a Technical Services Division at the National Office.

III. Forest Service (FS)

OIG audits included FS activities and programs involving temporary roads, timber stand improvement, and eliminating pollution on national forest land. Highlights follow:

- A. Temporary Roads. Our audit disclosed poorly constructed, erosion-prone, temporary roads in National Forests in the West. Most were logging roads that should have been closed after logging was completed. However, many of them were being used as permanent roads because there was no other way into large areas of National Forests. Most of these roads were built on excessive grades with poor alignment, had woody debris mixed in with the excavated material, and had no ditches, permanent culverts, stable fills, or cutbanks.

Based in part on our recommendations, FS will bring temporary roads up to permanent road standards or eliminate them.

- B. Timber Stand Improvement. FS collects money from timber sale purchasers to cover the cost of reforestation in the areas cutover by the purchasers. Our audit at several FS Regions showed an increasing deficit of money needed for this purpose. In one Region the deficit, approaching \$10 million, was caused by conflicting National instructions, failure to recognize that costs were rising, and reluctance to use collection authority.

In another Region, about 30% of the seedlings planted during 1968-70 were replants where as many as four previous plantings had failed. These failures resulted in an investment of about \$2.8 million. Efforts to identify the causes of these failures had been limited and unsuccessful.

Based in part on our audit report, FS has made major changes, including delaying clear-cutting where there is no assurance that a suitable stand of new trees could be established within five years.

- C. Water Pollution Abatement. A recent Executive Order required agencies to insure that facilities under their jurisdiction did not contribute to air and water pollution.

Our audit showed that some FS field units had not identified, inventoried, and examined facilities with known or potential pollution problems nor designed actions to solve them. The Forest Service took immediate action to insure an accurate inventory of such facilities and has begun or accelerated projects to reduce or eliminate pollution.

IV. Agricultural Marketing Service (AMS)

Tobacco Inspection and Grading. Tobacco is inspected and graded at 176 officially-designated tobacco auction markets. Present laws do not allow fees to be charged for this Federal service.

Federal inspection and grading of tobacco costs about \$4 million a year. A charge of only 20¢ per 100 pounds of tobacco (worth about \$60 to \$90) would bring in about \$3.6 million a year.

The agency accepted our audit finding and recommendation, and plans to propose legislation to allow the Secretary to assess inspection and grading fees.

V. Commodity Exchange Authority (CEA)

Based on our audit findings, we recommended that CEA:

- A. No longer rely primarily on self-regulation by commodity exchanges. (The exchanges lacked effective systems to prevent manipulating prices and cornering markets.)
- B. Improve the follow-up system to make sure that traders comply with warning letters, stipulations of compliance, and cease and desist orders; and enforce trader reporting requirements.
- C. Vigorously and promptly investigate suspected market manipulation or other violations of the Act.

Program officials generally agreed with our audit findings and recommendations, and they have started corrective action.

VI. Food and Nutrition Service (FNS)

- A. Child Nutrition Programs: Some of the more significant problems disclosed by our nationwide audit of last year's School Lunch and School Breakfast Programs were:
1. Delays in determining eligibility, due partly to legislative changes, deprived at least 1.5 million needy children of free meals until November 1971, about two months after schools opened.
 2. Many children did not get meals because their schools did not have equipment needed to prepare and serve meals. Although Federal funds were available to buy the equipment in these non-participating schools, the money was used to expand the facilities in participating schools.
 3. Many school officials showed little interest in getting free meals to needy children.

Program officials are taking corrective action.

- B. Special Food Service Program for Children: This program extends the benefits of the School Lunch Program to needy children during the summer months. We audited this program in ten metropolitan areas during the summer of 1971.

Food Service in playgrounds, housing developments, and roped-off streets, is much more difficult to manage than in the school cafeteria. Food delivery is more difficult and control over service is less practical. Some of the more serious conditions found are these:

1. Free lunches were served to adults.
2. Some food was wasted because it was monotonous and unappetizing, site supervisors ordered too much, and some was already spoiled when it was delivered.
3. Sponsors and State agencies did not have enough workers to run the program.

FNS has furnished instructional manuals as guides to program operators, and plans to intensify monitoring of program operations and train sponsor and site workers.

- C. Food Stamp Program: Our continuing reviews of the food stamp program have turned up many weaknesses. The more important ones are:

1. Some county welfare officials ran the program with little regard for proper certification. We estimated (based on a statistical sample) that in five months one county gave over \$200,000 in program benefits to people who were not eligible.
2. Following a group protest at a food stamp office, the county welfare board issued large amounts of food stamps with little regard for eligibility of recipients. About \$275,000 in bonus stamps were thus improperly issued.
3. Forty-two counties in three States, without USDA approval, used a "self-declaration certification system" (information given by applicants was accepted without checking). This resulted in large losses through issuance to ineligible recipients and over-issuances to eligibles. In one food stamp office, we estimated (using statistical sampling methods) that over \$150,000 in bonus stamps were improperly issued.
4. In several States, our audits disclosed that automated issuance systems did not normally have enough checks and controls to insure that duplicate issuances would be timely found and corrected. In five selected counties in one State, we found duplicate issuances that (based on statistical sampling) we estimate involved approximately \$375,000 in about one year.

FNS requested some of these audits and, in cooperation with the USDA General Counsel and the Department of Justice, is taking action to recover known losses.

VII. Animal and Plant Health Inspection Service (APHIS)

- A. Hog Cholera. Hog farmers are paid fair market value for infected hogs that are destroyed. We found that varying appraisal methods caused some farmers to get more than market value for their infected hogs.

Feeding raw or improperly-treated garbage to hogs was the cause for about 11% of the new hog cholera cases in 1970. Our review showed that APHIS did not identify all garbage feeders nor inspect all garbage treatment plants often enough.

APHIS is taking corrective action based on our recommendations.

B. Brucellosis. The Department's brucellosis eradication program depends on (a) identifying infected cattle by blood tests when the cattle are marketed and (b) tracing infected cattle back to herds; then, testing and quarantining herds until infected cattle are free of brucellosis. Our audit indicated that the program is only partially effective because of the conditions shown below:

1. Market Testing. Blood samples are supposed to be drawn from marketed cattle and the resulting tests given to USDA. During July to December 1970, 44% of the blood test results (nationwide) were not accounted for. In 1970, 63% of the test results from Texas (one of the States with a brucellosis problem) were not accounted for.
2. Quarantine. After an infected herd is identified, no animals are to be moved (except for slaughter) until the herd has passed a retest at least 60 days after the infected cattle are removed and a legal release is obtained. Our audit revealed (1) delays in retesting herds and (2) failure to account for all quarantined animals. For example, in one herd of 139 animals to be retested, 95 were retested and 44 were unaccounted for. During our audit, it was found that the 44 cattle were moved to other farms and 6 of the 44 were to be used as breeding stock.

APHIS generally agreed with our findings and has begun corrective action.

VIII. Extension Service (ES)

At the request of agency officials administering a Federal/State cooperative education program, we audited the District of Columbia Cooperative Extension Service (DCES). In our audit and resulting investigation covering FY 1969-71, we found:

1. Over \$300,000 ineligible or questionable spending of Federal and District of Columbia matching funds.
2. Ineffective management and possible fraud.

Extension Service is requiring DCES to replace misused funds. Also, Extension Service is helping DCES improve program operations and provide better accounting for cooperative extension funds.

IX. Investigations

OIG investigates all violations of criminal statutes relating to this Department except for the limited instances where another Federal agency (basically the FBI and Secret Service) has primary jurisdiction (and chooses to assert it). OIG also investigates program violations and non-criminal employee misconduct cases.

OIG investigation reports may support administrative actions by USDA, other Federal Agencies, and State and local authorities. Legal actions that result are processed with the Department of Justice and local law enforcement agencies through USDA's General Counsel.

Investigation requests rose from 3,000 in FY 1971 to 3,100 for FY 1972. The number of investigation reports issued increased from 3,100 in FY 1971 to 3,700 in FY 1972.

We investigated irregularities in a wide variety of program. Some examples follow:

A. Meat and Poultry Inspection and Grading

After two years of investigations by OIG and the Department of Justice, a Boston grand jury indicted for bribery 40 meat inspectors, 13 meat processing companies, and 6 company officials. Trials are now going on, and investigations are continuing. In consultation with the U.S. Attorney General's Office, similar investigations are under way in Los Angeles and New York City.

B. Rural Housing

Our investigation in this expanding program covered inferior construction, conflicts of interest, inadequate house inspections (by Farmers Home Administration employees), and contractors' failure to pay for materials.

C. Wheat, Cotton, and Feed Grain Programs

Set-Aside and maximum-payment-limitation violations highlighted our investigations of these programs. In one California County, our investigations resulted in assessment of penalties of almost a half million dollars.

D. Food Stamp Program

This program continues to expand at an enormous rate, and we have concentrated on areas of serious fraud and organized criminal activities. We have investigated fraud within issuing offices, recipient "ring" activities, and other trafficking operations in major cities throughout the country. Some of the most serious violations have been detected in Chicago, San Antonio, Sacramento, Los Angeles, Gary, and Washington.

E. Other

We investigated complaints of discrimination in Federal employment (Department-wide) and discrimination in USDA program administration. These investigations were aimed at assuring that no employee or program participant of this Department was treated unfairly.

OFFICE OF THE GENERAL COUNSEL

Purpose Statement

The Office of the General Counsel, prior to 1955 known as the Office of the Solicitor, was established in 1910 (70 Stat. 742) as the law office of the Department of Agriculture.

The General Counsel, as chief law officer of the Department, is responsible for providing legal services for all programs, operations, and activities of the Department. He is assisted by a Deputy General Counsel and three Assistant General Counsels, each of whom is responsible for a portion of the legal work of the Department. The functions of this Office are carried out in the Washington office and in 20 field offices.

The field offices handle legal work relating to the activities in the field of the Agricultural Stabilization and Conservation Service, Commodity Credit Corporation, Farmers Home Administration, Federal Crop Insurance Corporation, Forest Service, and Soil Conservation Service, and the Agricultural Stabilization and Conservation Committees. By special assignment of the General Counsel, Deputy General Counsel, or by an Assistant General Counsel, legal work relating to other programs and activities of the Department may be handled by a field office.

Legal Advice - The Office of the General Counsel issues both formal and informal opinions on legal questions arising in the administration of the Department's programs; prepares or reviews administrative rules and regulations applicable to the public; drafts proposed legislation; prepares or interprets contracts, mortgages, leases, deeds, and similar documents; prosecutes patent applications arising out of inventions by Department employees; examines title to lands to be acquired by the Department or accepted as security for loans; and considers and determines claims by and against the United States arising out of the Department's activities.

Administrative Proceedings - In administrative proceedings for the promulgation of rules having the force and effect of law and in quasi-judicial hearings held in connection with the administration of various programs, the Department is represented by the General Counsel.

Civil Litigation - Civil litigation arising out of the Department's work is handled by the Department of Justice, with the Office of the General Counsel assisting in the preparation and trial of such cases, except that the General Counsel represents the Secretary in administrative proceedings involving freight rates on farm commodities and in appeals from the decisions of the Commission to the courts and, by special assignment, the Assistant General Counsel for Litigation represents the Department in certain classes of cases before the United States Courts of Appeals.

Criminal Litigation - Cases having criminal aspects are reviewed for the purpose of referring them to the Department of Justice.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

Item	Actual		Estimated		Budget Estimate	
	1972		Available, 1973		1974	
	Amount	Man-Years	Amount	Man-Years	Amount	Man-Years
Office of the General Counsel	\$6,560,000	371	\$6,666,000	371	\$6,666,000	368
Obligations under other USDA						
appropriations:						
Salaries and Expenses, Agricultural						
Stabilization and Conservation						
Service - legal services on the						
conservation reserve program	29,528	2	32,000	2	32,000	2
Agricultural Credit Insurance Fund,						
Farmers Home Administration - legal						
services on the emergency credit						
loan program	40,000	4	60,000	4	60,000	4
Total, Other USDA appropriations	69,528	6	92,000	6	92,000	6
Total, Agricultural Appropriation						
Bill	6,629,528	377	6,758,000	377	6,758,000	374
Other funds:						
Reimbursements from Forest Service						
for:						
Board of Forest Appeals	54,172	1	60,000	1	60,000	1
Land and Water Conservation Fund						
Act	174,159	9	200,000	9	200,000	9
Total, other funds	228,331	10	260,000	10	260,000	10
Total, Office of the General Counsel ..	6,857,859	387	7,018,000	387	7,018,000	384

OFFICE OF THE GENERAL COUNSEL

Appropriation Act, 1973	\$6,666,000
Budget Estimate, 1974	<u>6,666,000</u>

PROJECT STATEMENT

Project	1972	1973 :(estimated):	1974 :(estimated):
1. Commodity and production stabilization	\$1,677,621	\$1,762,000	\$1,762,000
2. Marketing, regulatory laws, research and operations	2,151,804	2,251,000	2,251,000
3. Rural development and conserv- ation	2,664,999	2,653,000	2,653,000
Unobligated balance	65,576	---	---
Total available or estimate	6,560,000	6,666,000 ^{a/}	6,666,000

^{a/} Of this amount, \$13,000 has been withheld from use in 1973 principally from funds budgeted for travel.

STATUS OF PROGRAM

The Office of the General Counsel is responsible for providing legal services for all activities of the Department.

These services include the giving of opinions on legal questions arising in the administration of the Department's activities; the preparation or review of rules and regulations applicable to the public; the drafting of proposed legislation; the preparation and interpretation of contracts, mortgages, leases, deeds, and other documents; the prosecution of patent applications arising out of the inventions by the Department's employees; the examination of the title to lands to be acquired by the Department or accepted as security for loans; the consideration and determination of claims by and against the United States arising out of the Department's activities; the representation of the Department in formal administrative proceedings; the referral of cases to the Department of Justice; assisting that Department in the preparation and trial of cases involving the activities of the Department of Agriculture; and representing the Secretary of Agriculture before the Interstate Commerce Commission in proceedings involving freight rates on farm commodities and in appeals from the Commission to the courts.

COMMODITY AND PRODUCTION STABILIZATION

Commodity Credit Corporation Programs and Operations. A wide variety of legal services were required in fiscal year 1972 in connection with the activities of the Corporation which include commodity loans, purchases, payments, sales, storage programs and commodity export programs. The Office of the General Counsel assisted in drafting regulations, forms and contracts. It prepared many memoranda on various legal questions relating to program operations. The Office also reviewed many investigation and audit reports and referred a large number of these to the Department of Justice for civil and criminal action. Attorneys in the Office of the General Counsel assisted the Department of Justice in the preparation of pleadings and in the handling of pretrial proceedings as well as the trials of many cases in which the interests of the Corporation were involved. The number of legal matters under Commodity Credit Corporation programs acted upon remained about the same in fiscal year 1972 as in fiscal year 1971. During each year approximately 7,500 such matters were handled.

Commodity Credit Corporation Litigation.

	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
Commodity Credit Corporation Cases:			
Number of cases referred to Department of Justice	253	381	269
Total dollar value of referred cases (millions) ..	\$2.3	\$4.3	\$1.8
Number of cases pending in court or Department of Justice, end of year	600	567	485
Total dollar value of pending cases (millions) ...	\$44.8	\$42.8	\$42.6
Total collections from litigation (millions)	\$2.3	\$5.8	\$9.1

The total number of cases in all categories of Commodity Credit Corporation litigation referred to the Department of Justice decreased from fiscal year 1971, a peak year, to slightly above the level of referrals during fiscal year 1970. Collections from litigation increased substantially in fiscal year 1972. Much of the increase is accounted for by some \$6.7 million collected from a partial settlement of some of the issues in the Intra Bank litigation. Intra Bank was a Lebanese banking institution which failed about six years ago defaulting on letters of credit in favor of Commodity Credit Corporation.

Transportation Cases. Claims of Commodity Credit Corporation against ocean and rail carriers continued to represent the single largest category of Commodity Credit Corporation litigation. Total dollar value of claims in this category was about \$6.7 million--about the same as it was at the close of fiscal year 1970 and somewhat less than at the end of last fiscal year. These claims present complex issues of law and fact and involved substantial sums of money. The legal proceedings involving the Penn Central Railroad Company in which more than \$400,000 in Commodity Credit Corporation claims are pending, continues to occupy the attention of attorneys in the Office. Action in the Consolidated Multidistrict Litigation against various railroads to recover the value of grain lost in transit is now concentrated in the suits against four of the carriers involved. Many other cases involving the same issue, i.e., whether hopper cars are designed and built in such a manner that grain losses cannot occur during movement of such cars, were settled by the Department of Justice during fiscal year 1972. A recommended decision favoring the carriers was filed by the hearing examiner in proceedings before the Interstate Commerce Commission involving the same issue as the Multidistrict Litigation. Exceptions have been filed by attorneys of the Office of the General Counsel on behalf of Commodity Credit Corporation and USDA. It seems likely that litigation and administrative proceedings on the question will continue to occupy the attention of this Office for some time.

Food Assistance Programs. The continued expansion and improved benefits with respect to the food assistance program have resulted in the referral to the Office of large numbers of violations cases. At the same time, increased program activities have added to the number of and complexity of legal questions presented for consideration.

Food Stamp Program. The significant growth of the Food Stamp Program in recent years is illustrated by the following table:

<u>End of FY</u>	<u>No. of Projects</u>	<u>Participants</u>	<u>Total Coupons</u>
1969	1,489	3.2 million	\$603 million
1970	1,747	6.5 million	\$1.1 billion
1971	2,026	10.5 million	\$2.7 billion
1972 (est.)	2,126	11.7 million	\$3.3 billion
1973 (est.)	2,228	over 12.1 million	over \$3.8 billion

As a result of this expansion, the volume of legal assistance required in connection with the Food Stamp Program continued to increase. The number of legal matters completed under the Food Stamp Program climbed from 2,495 in fiscal year 1971 to about 3,100 in fiscal year 1972.

New Food Stamp Program regulations embodying changes required by the 1971 amendments to the Food Stamp Act became effective early in fiscal year 1972. Many legal questions involving the construction of the new regulations were raised and answered during the year. After promulgation of the new regulations, several lawsuits against Department officials have challenged some of the changes in the statute and the regulations. Other legal services furnished by the Office in connection with the Food Stamp Program included the review of audit reports and investigations, as well as referral of appropriate cases for criminal or civil action to United States Attorneys.

The Office of the Inspector General conducted about 2,180 investigations of Food Stamp violations cases in fiscal year 1972. Nearly half of these cases were referred to the Office of the General Counsel for legal review. Litigation activities involving Food Stamp violations cases continues to increase. The rising trend in this work is illustrated by the following table, showing disposition of Food Stamp violations cases by this office during the last three fiscal years:

	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
Referred to U.S. Attorneys	346	648	721
Closed without referral (insufficient evidence)	216	226	235
Totals	562	874	956

Child Nutrition Programs. The total funds for the Child Nutrition Program--school lunch, school breakfast, special milk and special food service programs for children have been increasing in recent fiscal years--from about \$620 million in fiscal year 1969 to approximately \$1.2 billion in fiscal year 1972. Additional increases are expected in fiscal year 1973. As the Child Nutrition Programs have expanded there has been a concomitant demand on the Office of the General Counsel for more legal services in this area of program activities. Recently, for example, requests for legal assistance have been made in connection with claims by and against USDA arising out of the 1971 and 1972 summer feeding programs. It is expected that more such requests will be made on the office during the coming fiscal year.

Litigation under the Food Assistance Programs. During the last fiscal year challenges to the Department's administration of the food assistance programs have been made. One case filed in fiscal year 1972 challenged the nutritional adequacy of the diet which may be purchased by families participating in the Food Stamp Program. Plaintiffs contended, among other things, that food benefits valued at \$108 for a family of four are insufficient to provide good nutrition. The case was recently dismissed by the District Court. Four cases are pending in which the plaintiffs seek to obtain Food Stamp Program benefits lost through State administrative errors. Two recent cases, one in fiscal year 1972 and early in fiscal year 1973 have challenged the constitutionality of recent amendments to the Food Stamp Act. Attorneys of the Office have assisted the Department of Justice in the defense of these actions and further legal services in connection with this litigation will probably be required. It seems likely that additional lawsuits of this nature as well as legal actions in connection with the Child Nutrition Programs will be filed in the future.

Legislation. The Office assisted in the preparation of drafts of a number of legislative proposals affecting the set-aside programs for feed grains, wheat, and upland cotton for the years 1971-1973 and the other payment programs of the Department.

Import Controls and Trade Legislation. Legal assistance was given in the negotiation of agreements with foreign governments limiting imports of meat and strawberries and in the drafting of regulations to carry out some of these agreements. Last year voluntary agreements were reached with all major exporting countries to the United States, and regulations were required to implement a number of these agreements. The Office also provided assistance in the drafting of proclamations under the Meat Import Act. Legal assistance was provided in connection with proceedings under section 22 of the Agricultural Adjustment Act of 1933 for the imposition of quantitative limitations on additional items of dairy products and in hearings before the Tariff Commission. The Office assisted in drafting amendments to the regulations governing issuance of licenses to importers of dairy products subject to section 22 import restrictions and handled legal questions arising under such regulations regarding eligibility for licenses. Legal assistance was given also in handling questions arising under trade legislation and the GATT affecting agricultural commodities.

Public Law 480. Legal assistance was provided in the drafting of agreements with foreign governments under Public Law 480, in the drafting and interpretation of regulations providing for financing by CCC of commodities exported under such agreements and related ocean freight, and with respect to legal problems arising in the day-to-day operations of the program. The Office also assisted the Department of Justice in the handling of litigation arising under the program.

Wheat Export Programs. Legal assistance was given in the revision and interpretation of regulations governing the Wheat Export Payment Program and with respect to the administration of the International Grains Agreement.

Market Development and Technical Assistance Abroad. Attorneys of the Office reviewed and assisted in the drafting of agreements with cooperators providing for market development activities abroad for agricultural commodities. Legal services were furnished in drafting and reviewing agreements relating to market development research by the Economic Research Service and for the design and construction of trade fair exhibits abroad and in the handling of disputes arising under market development

agreements. The Office also assisted in drafting of agreements providing for the services of this Department in carrying out technical assistance activities abroad.

Payment Programs. Legal services were rendered in connection with the special programs authorized by the Agricultural Act of 1970 and the Food and Agriculture Act of 1965, as amended. Assistance was provided in reviewing and drafting amendments to the regulations governing the set-aside programs for wheat, upland cotton, and feed grains as authorized by the Agricultural Act of 1970. Included in this work was legal assistance in drafting amendments to the regulations governing the application of the \$55,000 payment limitation and interpreting the regulations in connection with numerous cases presented to the Department.

The Office assisted the Department of Justice in the handling of a landmark case of environmental law affecting the Department's commodity payment and loan programs. In the case of Kings County Economic Community Development Association, et al. v. Butz, et al., the plaintiffs sought to enjoin the defendants from making agricultural program payments and loans to producers who contribute to water pollution through the use of pesticides and fertilizers. The District Court ruled in favor of the United States and dismissed the action. The plaintiffs appealed the District Court's decision to the Court of Appeals where the matter is now pending.

Legal services were furnished in connection with the formulation and review of amendments to program regulations governing the Processor Wheat Marketing Certificate Program, the Cropland Adjustment Program, the Extra Long Staple Cotton Program, the Rural Environmental Assistance Program, the Naval Stores Conservation Program, and the Appalachian Land Use and Conservation Program.

The Office participated in numerous producer appeals arising under the programs, giving legal advice as required and assisting in the drafting of proposed determinations. Over 276 appeals were handled at the Washington level during fiscal year 1972, with producers and their counsels making personal appearances at 58 hearings. The Office also rendered legal assistance in the collection of payments due from wheat processors under the certificate program. Cases involving the payment programs and the wheat processor certificate program referred to the Department of Justice for litigation are reflected in the following table:

Pending in the Department of Justice	
at the end of FY 1971	149
Referred during FY 1972	134
Closed during FY 1972	146

The dollar value of the cases referred during fiscal year 1972 was in excess of \$404,424.68. The actual amount of the recoveries totaled in excess of \$585,957.01.

Farm Acreage Allotments and Marketing Quota Programs. During fiscal year 1972 this Office assisted in preparing amendments to and revisions of several sets of acreage allotment, marketing quota, and related regulations; participated in the preparation of proposed amendments to legislation and assisted in presenting the views of the Department on such legislation to legislative committees of the Congress; and referred to the Department of Justice and United States Attorneys for possible legal action a considerable volume of cases, criminal and civil, involving the marketing quota programs. We also made litigation reports and assisted in the preparation for trial of numerous cases in which farmers sought judicial reviews of administrative determinations involving their farm marketing quotas.

Sugar Act. The Office assisted in the establishment of the new Texas Sugarcane Area pursuant to the extension of and amendments to the Sugar Act of 1948 which were enacted in October 1971 and in the preparation of new regulations incident thereto. We also assisted in the preparation for trial of a number of cases in litigation and assisted in the preparation of annual determinations and regulations issued under the Sugar Act reflecting market and production conditions.

Crop Insurance. The Office assisted in the preparation of an amendment to the Federal Crop Insurance Act to authorize insurance contracts with persons eighteen years of age or older having a bona fide interest in a crop and to provide for full legal liability on the part of such persons. The Office also assisted in the preparation of the reinsurance agreements with Farm Insurance of Puerto Rico. In addition, the Office submitted to the Department of Justice and United States Attorneys for possible legal action a considerable volume of cases, both criminal and civil, involving the Federal Crop Insurance Corporation. These included eleven cases of possible criminal and civil fraud, fourteen suits brought against the Corporation for indemnities, one suit brought to recover a premium collected by the Corporation by set-off, and two suits brought to recover erroneous over-payments of indemnities. The Office has also given a rather large volume of both written and oral opinions to the Corporation on difficult matters involving the administration of the program. A novel question of reformation of the contract under the Arizona-Desert Valley Citrus Crop Insurance Regulations involving damage due to an early freeze was submitted to the Comptroller General for an opinion.

MARKETING, REGULATORY LAWS, RESEARCH AND OPERATIONS

Marketing Agreements and Orders. During fiscal year 1972, 21 amendment hearings were held with respect to milk orders and 85 amendatory actions were taken. 23 suspension orders were issued. All existing milk orders were affected by such amendments or suspension orders. There were 62 milk marketing orders in effect as of July 1, 1972; many of these orders now being far larger and more complex than their predecessor orders because of recent consolidations.

Six amendatory hearings were conducted and amendment action taken with respect to 11 fruit and vegetable marketing orders. A total of 48 such marketing orders and one marketing agreement (peanuts) were in effect at the close of the year. In addition, there are import regulations covering 11 commodities. A lengthy hearing on a proposed marketing order for Western Lettuce was held during fiscal year 1972, followed by recommended and final decisions which proposed the adoption of such a marketing order. However, the order was not issued because it failed to obtain approval of the requisite percentage of producers voting in a referendum.

The volume of litigation under marketing orders continued at a high level during fiscal year 1972. 59 court actions were instituted and 13 formal administrative proceedings were initiated by handlers, leaving 137 and 23 such matters, respectively, pending at the end of the fiscal year. Included among these new cases were several complex antitrust actions brought against large cooperative organizations in which the United States or the Secretary were named as parties defendant along with other defendants. Massive discovery proceedings have been initiated, such discovery extending into the procedures and facts underlying agency action by the Department.

During fiscal year 1971, the Agricultural Marketing Agreement Act of 1937 was amended in important respects concerning so-called Class I base plans under milk marketing orders and to provide for research, advertising and promotion plans under milk orders to be financed by producer assessments with provision for refunds to dissenting producers. During fiscal year 1972, hearings were held in connection with milk promotion plans for 10 marketing orders. Only one such proceeding was completed in fiscal year 1972, the remainder being carried over into fiscal year 1973. Hearings to amend three milk marketing orders to include Class I base plan provisions were held in fiscal year 1972. In one of these, the proceedings were completed. It is expected that there will be substantial activity to amend other marketing orders in these respects in the near future.

Cotton Research and Promotion Act. Fiscal year 1972 was the fifth season of the operation under the Cotton Research and Promotion Order. Although the collection record was good, it nevertheless was necessary to institute enforcement actions in various district courts of the United States to compel compliance with the order. There were 8 such actions pending at the beginning of fiscal year 1972 and 3 new such actions were instituted.

Agricultural Fair Practices Act, 7 U.S.C. 2301 et seq. During fiscal year 1972, a number of complaints were received of alleged violations of this Act, which complaints have been processed or are in the course of being processed. Two new cases were referred to the Department of Justice during fiscal year 1972. Three such cases were pending, awaiting trial, at the end of fiscal year 1972.

Egg Products Inspection Act. This Act became effective as to egg products July 1, 1971, and as to shell eggs on July 1, 1972. During fiscal year 1972, there was activity in the drafting of regulations with respect to shell eggs. It is expected that about 10,000 shell egg handlers will be subject to regulation under the Act beginning with fiscal year 1973. Under the egg products provisions of the Act, 2 court cases were instituted in fiscal year 1972 and were still pending at the end of the fiscal year.

Potato Research and Promotion Act. This Act became effective January 11, 1971, and during fiscal year 1972 an implementing order and regulations pursuant thereto were formulated and issued to be in practical effect beginning in September 1972 when assessments are due to begin to finance this program. It is expected that 5,000 to 6,000 potato handlers will be subject to the program throughout the nation.

Virus-Serum-Toxin Act. During fiscal year 1972, 2 criminal actions were instituted and 2 such actions were pending at the end of the fiscal year. In addition, there was considerable activity with respect to a number of investigations of a criminal nature which may result in further criminal prosecutions in fiscal year 1973.

Perishable Agricultural Commodities Act. In fiscal year 1972, 402 reparation cases were instituted. Action was taken which resulted in disposing of 367 cases, leaving 145 pending on June 30, 1972. Ten disciplinary proceedings were pending at the beginning of the fiscal year. Nineteen new proceedings were instituted during the year and 22 were disposed of. In addition to orders disposing of cases, 60 additional orders were issued. These consisted of 18 stay orders, 14 orders in connection with petitions for reconsideration, 4 orders for the payment of undisputed amounts, and 24 miscellaneous orders. The volume of legal work under this Act, of which the handling of reparation and disciplinary cases is only a part, continued at a high level.

In addition to the reparation and disciplinary proceedings within the Department, 4 actions were instituted in the district courts of the United States in fiscal year 1972, all of which are presently pending.

The Office continued to maintain as much flexibility as possible in utilizing the services of qualified attorneys in the various fields of activity, but priorities for handling the workload were necessary in order to meet the litigation and other deadlines, and the following backlog of work remained on June 30, 1972.

<u>Pending cases for referral to the Department of Justice</u>	<u>as of 6/30/72</u>
Animal and Plant Quarantine Acts and Laboratory Animal Welfare Act	29
Federal Seed Act	3
Commodity Exchange Act	1
Grain Standards Act	3
Meat and Poultry Inspection Acts	22
Twenty-Eight Hour Law	390
Packers and Stockyards Act	<u>22</u>
Subtotal	470

<u>Pending Administrative Proceedings</u>	as of <u>6/30/72</u>
Commodity Exchange Act	5
Packers and Stockyards Act:	
Disciplinary	58
Reparation	37
Laboratory Animal Welfare Act	<u>3</u>
Subtotal	103
<u>Other Pending Matters</u>	
Federal Register dockets for review and requests for legal opinions	146
Miscellaneous	<u>228</u>
Subtotal	374
Total	947

Packers and Stockyards Act. In fiscal year 1972, 135 disciplinary and 21 reparation proceedings were instituted. At the end of the year, 58 disciplinary cases were on hand for institution or other action and 37 reparation cases. In fiscal year 1972, 18 criminal and 63 civil enforcement cases were submitted to the Department of Justice, and at the end of the year 22 such cases were pending in the Office.

There was also a heavy demand for legal services in connection with the consideration and drafting of regulations and requests for written and informal opinions concerning a wide range or complex and novel legal questions.

Commodity Exchange Act. During fiscal year 1972, 17 formal administrative proceedings were instituted as compared with three such proceedings instituted during fiscal year 1971; extensive legal services were rendered in connection with a total of 26 administrative disciplinary proceedings which were handled or under consideration during fiscal year 1972. Also, 14 criminal cases were referred to the Department of Justice during the fiscal year. Legal services were also required in connection with 7 other important court cases.

Extensive legal services were also required in connection with the drafting of proposed legislation and regulations under the Act. There was also heavy demand for legal opinions dealing with the interpretation and scope of the Commodity Exchange Act.

Meat and Poultry Products Inspection Acts. The need for legal services under the Federal Meat Inspection Act and the Poultry Products Inspection Act continued at a very high level. Legal advice on many novel and important issues of law was required in connection with twenty actions of the Department for designation, termination or withdrawal of designation, or publication of notice of intended designation of eight States, Puerto Rico, Guam and the Virgin Islands, and approximately 50 documents amending or proposing to amend the regulations under these Acts. Extensive legal services were furnished in connection with 9 court actions in the U.S. District Courts of Appeal wherein various actions of the Department were challenged, and in connection with a very important case involving the validity of a Michigan statute as applied to federally inspected meat products. The preparation of numerous opinions and memoranda and giving of oral advice on a wide variety of important legal questions under the acts also constituted a substantial portion of the legal services required in fiscal year 1972.

Also during fiscal year 1972, 37 criminal and civil cases were referred to the Department of Justice and 22 were pending on June 30, 1972. The Office also reviewed reports of apparent violations of the Acts for which the administrative officials recommended disposition by warning letter.

Other Regulatory Statutes and Activities. During the fiscal year, 208 criminal and civil cases under the statutes listed below were referred to the Department of Justice.

<u>Statute</u>	<u>Number of Cases Referred</u>	
	<u>Criminal</u>	<u>Civil</u>
Animal and Plant quarantine laws	152	--
Federal Seed Act	--	27
Agricultural Marketing Act of 1946	5	--
Grain Standards Act	5	--
Twenty-eight Hour Law	--	17*
United States Warehouse Act	2	--
Subtotal	<u>164</u>	<u>44</u>
Total	208	

*These cases involved 53 reports of violations of the Act.

The Office reviewed numerous documents for amendment of regulations and standards under these Acts. For example, under the Animal and Plant Quarantine Laws, approximately 200 documents amending or proposing to amend regulations were reviewed by the Office during fiscal year 1972. Extensive legal work was also required in connection with defense of a court action challenging the Department's regulation restricting imports of birds. The case was ultimately dismissed by the plaintiffs. A large proportion of the legal work under these laws also consisted of preparation of memoranda and giving of oral advice to the administrative officials on various legal questions arising under such laws.

Environmental Laws. During fiscal year 1972, the Office provided substantial legal services in matters arising under various Federal laws related to protection of the environment. The Department participated, both as a party litigant and as an intervenor, in the administrative hearing on DDT arising under the Federal Insecticide, Fungicide, and Rodenticide Act. This participation required extensive legal services since the hearing extended over some eight months. Additionally, legal services were required in the court case pertaining to the Imported-Fire Ant Control Program, wherein an order was sought to enjoin the program. The Office also furnished legal counsel to the Department's Pesticide Committee. Extensive legal services were also furnished to Department officials with respect to pending Federal legislation pertaining to regulation of pesticides and predator control.

Plant Variety Protection Act. With respect to the Plant Variety Protection Act, during fiscal year 1972, attorneys in this Office drafted and reviewed extensive regulations and rules of practice in order to implement the Act and provide for the necessary administrative procedures in this highly technical area. Attorneys of the Office attended meetings of the Plant Variety Protection Board and rendered legal opinions to the Board and administrative officials of this Department who are responsible for administering the Act.

Horse Protection Act. During fiscal year 1972, extensive legal services were needed in connection with the issuance of new regulations to implement the Horse Protection Act and to advise the responsible administrative officials with respect to numerous legal questions arising in the development of the program to implement the regulations and otherwise enforce the Act. The Office assisted in drafting rules of practice for proceedings for assessment of civil penalties under the Act and reviewed reports of investigation of possible violations of the Act.

Animal Welfare Act. The Office provided extensive legal services in connection with the drafting and review of the revisions of the regulations and standards under the Act that were necessitated by the 1970 amendments of the Act. A substantial part of the work under the Act also consisted of oral and written legal advice to the administrative officials on a variety of questions arising under the amendments. During the year, 4 administrative proceedings were instituted.

Transportation Services. During the fiscal year 1972, the Office represented the Secretary, the Commodity Credit Corporation, and the agricultural community in 23 proceedings before the Interstate Commerce Commission, the Federal Maritime Commission and the Federal courts. The litigation involved rates, charges and practices relating to agricultural commodities and farm supplies. The Office successfully participated in appealing two adverse decisions of the Interstate Commerce Commission to 3-judge Federal courts, and these matters are now both before the Supreme Court. In addition, the Office furnished written and oral legal advice on a wide variety of problems and reviewed and assisted in drafting numerous reports to Congress regarding proposed transportation legislation.

Legal services were also furnished in connection with the Defense Production Act; and many questions arising under the Freedom of Information Act.

Contracts and Agreements. Legal advice and assistance was given in regard to the preparation and execution of approximately 400 documents for the procurement of research, construction, service, and other miscellaneous needs of the Department. Such documents were either in the form of a contract, cooperative agreement, memorandum of understanding, memorandum of agreement, or grant, lease, or a permit for the use of property. Advice was also given in regard to the commercial licensing of the name and symbol "Smokey Bear" under 18 U.S.C. 711 and with regard to violations of this Act. Similar advice was also given concerning the name and symbol "Woodsy Owl". A considerable amount of time was spent in reviewing modifications of this Department's procurement regulations and standard contract forms. Determinations were made in approximately 60 cases involving alleged errors in bid. These bids ranged from minor amounts to over \$1,000,000.

Throughout the year this Office furnished counsel in connection with a number of appeals to the Department's Board of Contract Appeals. This work involved the preparation of an answer to the allegations of the contractor, a supporting brief, and where a hearing was necessary, an oral presentation of the Government's case.

Departmental Administration. Numerous questions were answered relating to application of Federal personnel laws and regulations. All OIG investigation reports involving personnel irregularities were reviewed and, where the facts indicated a violation of a criminal statute, referred to the Department of Justice for consideration of criminal action. The employing agency was advised with respect to appropriate action to be taken in employee irregularity cases. Legal advice was given in connection with the suspension and adverse action appeals of employees, including 40 meat inspectors in the Boston area, and attorneys orally represented the Department at several hearings.

Considerable time was spent in connection with problems arising under the Smith-Lever Act which provides for cooperative agricultural extension work, and the Hatch Act which provides for agricultural research at experiment stations.

Numerous legal problems arising from the payment of indemnities under the animal disease eradication programs were resolved, particularly in connection with the outbreaks of Venezuelan Equine Encephalomyelitis and Exotic Newcastle disease. Work was done in connection with Mexico and Central American countries in the control of communicable animal diseases.

Legal assistance was provided in connection with Title VI of the Civil Rights Act of 1964, other legislation such as the Equal Employment Opportunity Act of 1972, and other civil rights matters. Considerable time was spent in consultation with officials of the Department advising on this developing area of law and written advice was given on specific problems. Departmental and agency communications with civil rights aspects were reviewed and approved. All OIG investigations and audits involving civil rights were also reviewed by this Office. Attorneys act as agency counsel in administrative proceedings under Title VI, and all pleadings are prepared in the Office. Assistance is rendered to the Department of Justice in the event of litigation. Three cases involving Alabama, Mississippi, and North Carolina Cooperative Extension Services were in litigation this fiscal year.

Assistance was given to the agencies of the Department in connection with requests for records under the Freedom of Information Act and other legal questions arising under the Act. There were three lawsuits filed under the Act during the year to compel the disclosure of Department records. The Office also presented oral testimony and gave legal assistance in connection with the Department's appearance before a Congressional committee in hearings as to the effectiveness of the Act.

Farmer Cooperatives. Legal services for Farmer Cooperative Service included advice on such matters as antitrust, mergers and consolidations, changes in articles of incorporation and bylaws, marketing contracts, and tax questions of interest to cooperatives and their patrons. Legal assistance was furnished in analyzing a variety of bills pending in Congress to amend certain basic Federal statutory provisions relating to farmer cooperatives and agricultural producers.

Torts and Other Claims. Claims filed under the Federal Tort Claims Act and other statutes constitute a major activity. During the year, 421 new claims were received under the Federal Tort Claims Act by the Washington Office, and 177 claims were received by the field Offices. The handling of these claims included a review of the facts, the research, analysis, and application of State laws and court decisions; and a determination as to liability and damages. Many of the claims involved extensive negotiations with the claimants or their attorneys. A large number of claims were pending from prior years. During the year, 373 claims were allowed, and 177 disallowed. In several cases, because the allowance was over \$25,000, approval of the Department of Justice was required. The amounts allowed ranged from a few dollars to \$60,000 in the case of a large personal injury claim involving complete facts.

Fifty-nine suits were filed with respect to the disallowed claims. In addition to the new cases filed during the year, there were 117 suits pending involving this Department. The total amount of damages sought in these suits amounted to several million dollars.

In addition to the claims under the Tort Claims Act, recommendations as to payment were written to the Forest Service by the Office in a large number of claims under 16 U.S.C. 502 (d) and 16 U.S.C. 574, for injury or damage to private property arising from FS activities.

The Office also gave oral and written legal advice to the agencies as to termination of or compromise of claims under the Federal Claims Collection Act. A number of claims were referred to the Department of Justice for enforced collection where collection could not be effected through administrative efforts.

The Office also made determinations in claims by employees under the Military Personnel and Civilian Employees' Claims Act for the loss, destruction, or injury to an employee's private property used in official duty and losses due to transportation or storage where attempts to recover from the shipper or warehouseman were not successful.

Patents. During the year, 183 cases were submitted. 512 cases, including those filed in prior years were prosecuted through various stages in the Patent Office; 173 new cases were filed, 120 terminated as patents, and 33 terminated by abandonment. Thirteen finally-rejected cases were appealed to the Board of Appeals. Of appeals filed in previous years, 10 were terminated during the year favorable to the Government. Two interferences from previous years were terminated favorable to the Government, and two new ones were declared. Eight are still pending. Two new trademark applications were received and two registrations were granted.

RURAL DEVELOPMENT AND CONSERVATION

Farmers Home Administration - Expanded Programs. The volume of FHA direct and insured loans and grants increased from \$2,399,702,121 in fiscal year 1971 to \$2,789,805,921 in fiscal year 1972, and from 191,596 loans and grants in 1971 to 203,533 loans and grants in 1972. The greater volume resulted from increased appropriations by the Congress and increased insured loan apportionments by the Office of Management and Budget for programs authorized by the Consolidated Farmers Home Administration Act of 1961, and Title V of the Housing Act of 1949, with particular emphasis on rural housing loans and grants for single and multi-unit dwellings and for rural water and waste disposal systems. In addition to the quantitative increase in legal work recently, enacted and proposed legislation created a substantial increase in the amount of legal work in 1972, which is anticipated to continue in fiscal year 1973. Such nonroutine types of legal work which is necessary to implement new and expanded program authorizations involving statutory interpretations and assisting with drafting and legal approval of FHA regulations, is particularly time-consuming. Examples of recent legislation and legislative proposals, on which considerable time was devoted during fiscal year 1972 and which will require additional work in 1973, are the proposed Rural Development Act of 1972 and the Disaster Relief Act of 1972, which was signed by the President on August 16, 1972. The Rural Development Act would substantially increase Farmers Home authority and would permit the agency to make, insure and guarantee business loans and a wider range of community facility loans.

For the third year since the beginning of the insured loan program in 1946, FHA marketed blocks of FHA insured obligations through a group of underwriters. During fiscal year 1972, 4 block sales were held involving a total of \$1.3 billion of insured obligations. This compares with the initial block sale of \$350 million in fiscal year 1970 and with 3 block sales involving \$800 million in fiscal year 1971. Each block sale requires legal counsel on such matters as preparing and revising the insurance contract, prospectus, purchase agreement, bailment agreement, and fiscal agency agreement between FHA and the Federal Reserve Bank of New York, obtaining opinions of the U.S. Attorney General, U.S. Comptroller of the Currency, and the Securities and Exchange Commission, and preparing legal opinions, memoranda, and certifications necessary for the closing.

Workload. The FHA legal work has continued to increase in volume and complexity during the past fiscal year. The increased emphasis in recent years on community facilities and multi-unit dwellings for which projects the applicant is a corporation or public body has greatly added to the complexity and time involved in making a single loan or grant as opposed to the situation that exists for loans to individuals for farm ownership, operating, or housing loans.

Servicing. As the FHA appropriations have increased and the FHA loans have aged, the servicing problems have vastly increased. This is partially evidenced by the second grouping of comparative figures above. The aggregate outstanding FHA loans being serviced by FHA at the close of fiscal year 1972 was \$9.4 billion. This compares with \$1.3 billion of outstanding loans at the close of fiscal year 1961. Additionally, as in loan making, the servicing problems involving community facilities and multiple-unit dwellings are far more complex and time-consuming than servicing problems involving an individual-type loan. Many of these more complex cases which arose during fiscal year 1972 and which it is anticipated will further increase during the coming fiscal years involve unique factual situations that must be resolved on a case-by-case basis. These pertain to such matters as the transfer of the assets to and the assumption of the liabilities by a larger

entity which may or may not be eligible for FHA financial assistance; the merger or consolidation of two or more FHA borrowers into a single, more efficient entity; and the readjustment of the debt terms of an FHA borrower which is having temporary financial problems. Substantial time was also spent in fiscal year 1972 in assisting the formulating of FHA regulations to cope with the more routine type of servicing problems for corporate and public-body type borrowers.

Other legal work in connection with loan servicing and collection consist of such matters as: (1) referring cases to United States Attorneys or to the Department of Justice for litigation, including in many cases the preparation of the necessary court documents, and pleadings, (2) handling power of sale foreclosures under deeds of trust, (3) preparing or approving claims to be filed in deceased and bankruptcy cases, (4) advising FHA with respect to compromise, cancellation, and charge off of claims, (5) drafting or approving instruments necessary for exchanges or sales of security property, and (6) assisting with the preparation and revisions of FHA regulations and forms to handle uniform types of servicing problems. Also, legal advice must be provided FHA in connection with its servicing of discontinued Federal programs such as those formerly administered by the Resettlement Administration, the Farm Security Administration, and the Emergency Crop and Feed Loan Offices of the Farm Credit Administration.

Rural Electrification & Telephone Programs - Loans and Security. Because of the expansion of capital needs of REA electric and telephone borrowers beyond the availability of REA loan funds, most REA loans now are concurrent loans with supplemental lenders providing the non-REA financing. This has involved consideration of problems incident to accommodating REA lien security to a variety of proposals, and to the review and drafting of a large number of complex security instruments intended to secure both REA and non-REA financing. Considerable legal assistance was rendered in implementing arrangements for concurrent loans by REA and the National Rural Utilities Cooperative Finance Corporation, organized to furnish supplemental financing for REA electric borrowers. Advice and assistance continue to be provided in connection with implementation of the Rural Telephone Bank Act, providing a supplemental source of financing for REA telephone borrowers.

Power Supply. To protect REA loan security interests and help achieve program objectives, REA continued to require substantial legal assistance in drafting and analyzing complex power supply and power pooling arrangements between REA-financed power supply cooperatives and other electric suppliers. Proposals for joint financing of generating plants involving both proposed REA and private financing were studied and developed. Pursuant to its compliance with Congressional recommendations to make so-called "power surveys" and carry on direct negotiations with power suppliers prior to making loans for electric generation and transmission facilities, REA has continued to require increasing legal assistance in such direct negotiations with power suppliers, in the analysis of power supply proposals and in the review of power survey dockets and certifications.

National Environmental Policy Act. The Office advised REA in matters under the National Environmental Policy Act of 1969. Continuing assistance will be required, particularly for REA bulk power supply loans for which the agency is required to prepare and publish in the Federal Register statements of environmental impact.

Cooperative Functioning. Problems relating to borrowers' cooperative powers and practices, bylaws and charter amendments required substantial legal attention, particularly because of mergers and consolidations among telephone borrowers. Reports indicating irregularities in the conduct of borrowers' business were reviewed, and legal advice given as to possible claims against fidelity bond carriers arising out of such irregularities; where such irregularities indicated violation of the False Reports Act or the False Claims Act, referrals were made to the Department of Justice for appropriate action.

Forestry & Other Land Programs - Administration of the National Forests, National Grasslands, and other lands under the jurisdiction of the Department of Agriculture. The Washington and field offices continued giving legal assistance to the Forest Service in the preparation and review of regulations and administrative appeal statements and decisions; the preparation and interpretation of timber sale contracts, special use permits, and grazing permits; the review of instructions for the Forest Service Manual; the acquisition of lands and interests therein; the interpretation of private rights in minerals on national forest lands; water rights on national forest and other lands; and matters in litigation. Legal assistance was also given during the year to the Agricultural Research Service on some of its programs, particularly land acquisitions and land uses.

Regulations. Legal advice was given in preparing Secretary's regulations for the administration and protection of National Forest System lands and with respect to Forest Service Manual instructions. Regulations were issued relating to timber management, control of the use of pesticides, and the implementation of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. Assistance has been given in the preparation of proposed regulations to implement Executive Order 11644 relating to the use of off-road vehicles on public lands and of proposed regulations to minimize adverse environmental impacts on national forest resources in connection with mineral activities.

Administrative Appeals. The number of decisions of Forest Service Officers appealed for review by Regional Foresters, the Chief, Forest Service, or the Board of Forest Appeals and the Secretary continued to be substantial. These appeals involve timber sales, grazing privileges, land use permits and proposed land exchanges. An increased number of appeals involved Forest Service decisions regarding the appropriate combination of uses for particular areas of the National Forests as required by the Multiple Use-Sustained Yield Act of 1960 (16 U.S.C. 528-531). Attorneys continued to act as counsel for the Forest Service in hearings of the Board of Forest Appeals.

Litigation. Legal assistance was given on a variety of actions and claims, including unauthorized removal of timber, minerals, and other Forest resources, unauthorized occupancy and use, cost of fire suppression and injury by fire and by other means of forest resources, breach of timber sale contracts, commission of petty offenses on the National Forests, and water rights adjudications. A large number of cases continue to be referred to United States Attorneys by attorneys of this Office, who drafted pleadings and briefs and assisted in the preparation for the trial of cases. In an important case decided by the Supreme Court in April of this year, Sierra Club v. Morton, et al., 405 U.S. 727, it was held that the Sierra Club, which seeks to prevent development of Mineral King Valley for public recreation, did not have standing to sue merely as an "interested" conservation organization. In other cases brought by conservation oriented organizations and individuals, the Federal courts have sustained decisions by forest officers concerning the management and use of National Forest resources. In Family Clan, Inc., et al. v. Philbrick (Civil No. 71-378, USDC, Ore.) a Forest Service decision to sell timber, which included the clear cutting of a portion of the sale area, was upheld. In National Forest Preservation Group, et al. v. Butz, et al., (Civil No. 2146, USDC, Mont.) the court upheld a decision to the Secretary of Agriculture to exchange National Forest lands, some of which would become part of the Big Sky recreation development in Montana, for lands owned by Burlington Northern, Inc., parcels of which are within Yellowstone National Park and the proposed Spanish Peaks Wilderness. A decision of importance to the management of the National Forests was rendered by the Court of Claims in Alabama v. United States, No. 16-71, in which it was held that monies collected for reforestation and sale area improvement were properly not included with other forest receipts in making 25 percent fund payments to the States. Several suits were brought in the past year by conservationists against, among others, the Secretary of Agriculture and the Chief, Forest Service, because National Forest lands are involved in proposed Federal Aid Highway Projects.

Land Acquisition Programs. The acquisition of land and related interests remain at the high level of last year. There were 535 purchase cases closed representing a total of 100,812 acres for a consideration of \$23,838,480. Scenic easements closed 5, containing 76 acres, value of \$11,515; donations 8, containing 963 acres, value of \$226,376, and administrative sites 3, containing 15 acres, value of \$53,150. Exchange cases closed numbered 144 with a total of 99,098 acres coming into Government ownership with a value of \$25,760,640. The number of rights-of-way for access to national forest land acquired last year was 1,413. Titles to all land and interests in land acquired are now approved by the Office of the General Counsel under a delegation of authority from the Attorney General.

Soil and Water Conservation District Programs. Legal assistance was given in the review of new memorandums of understanding with soil and water conservation districts, and in the interpretation and application of State and Federal laws in carrying out the Soil Conservation Service program of assistance to the more than 3,000 soil and water conservation districts in the United States. Assistance was also given in response to a large number of requests for aid in drafting legislation amending State soil and water conservation districts enabling laws to broaden the purposes and powers of districts, including participation in a task force for drafting model amendments relating to sediment control.

Watershed Protection and Flood Prevention Programs. In the planning phase of watershed projects about 18 watershed work plans were reviewed for legal sufficiency. In the installation of works of improvement, the usual high number of referrals were handled arising out of the administration of contracts, adequacy of land rights, and title review and approval of land rights acquired for fish and wildlife and recreational development. A substantial amount of legal work with respect to these programs was required to resolve problems arising in connection with the National Environmental Policy Act of 1969, the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, and environmental legislation proposals such as water pollution control amendments.

Legal assistance was furnished in connection with the preparation or analysis of a number of legislative proposals for amendment of the Secretary's basic authorities, or affecting the carrying out of such authority and review of other legislative proposals as requested. Also, assistance was given in review and analysis of State enabling legislation, including work on bringing up to date a summary of such legislation. Legal assistance was provided in connection with approximately 46 lawsuits pending during the year arising in connection with the installation of works of improvement.

Great Plains Conservation Program. Legal assistance was required in connection with problems arising out of contracts between the Secretary and producers, including interpretation of the provisions of such contracts, questions as to the control by the producers of affected lands, determination as to whether particular lands are covered by the Great Plains Act, and the extent of the plan of operations for the farm or ranch as required by the Act. Other work included disposition of claims against producers for refunds or adjustments arising out of contract violations.

Resource Conservation and Development Program. Legal work included the interpretation and application of State laws in connection with the eligibility and legal powers of sponsors of RC&D projects, contract administration problems and interpretations of applicable Federal laws to determine the authority of the Secretary to plan and carry out such projects. Assistance was also given in the review of field instructional material involving statutory interpretations, and in connection with matters growing out of the requirements of the National Environmental Policy Act.

Water Resource Responsibility of the Secretary. Legal advice was furnished representatives of the Secretary at meetings of the Water Resources Council and in connection with the problems of and the various task forces set up by the Council. Assistance was furnished in connection with the completion of the Study on Flood Plain Management and Regulations made by the University of Wisconsin in

cooperation with the Council, especially in the review and analysis of the second volume of the report thereon. Continued assistance was given in a task group considering and working out a Federal position on a proposed California-Nevada Interstate Compact for the Lake Tahoe basin and the Carson, Truckee, and Walker Rivers. Continued legal assistance was furnished in connection with water rights adjudications affecting this Department.

OFFICE OF MANAGEMENT SERVICES

Purpose Statement

The Office of Management Services provides consolidated and centralized management support services to several agencies and offices of the Department. It was established by Secretary's Memorandum No. 1529, dated January 29, 1963, to provide greater economy and effectiveness in the rendering of management service and advice through improved utilization of manpower and management techniques, increased specialization of professional skills, and more extensive use of timesaving equipment.

The consolidated management support functions include budget and finance, personnel and related programs, administrative services, information and general management assistance. These functions are financed by a direct appropriation to the Office, except for any agency activity which is performed for others on a reimbursable or advance payment basis. The Office is reimbursed for management support of these activities.

The Office provides services for the following agencies and offices.

Cooperative State Research Service	Office of the Secretary:
Farmer Cooperative Service	Office of the Secretary
Economic Research Service	Office of Budget and Finance
Statistical Reporting Service	Office of Plant and Operations
Commodity Exchange Authority	Office of Information Systems
Office of the Inspector General	Office of Personnel
Packers and Stockyards Administration	Office of Administrative Law
Office of the General Counsel	Judges and the Judicial Officer
Rural Development Service	Office of Equal Opportunity
National Agricultural Library	Office of Information
	Office of Management Services

The functions of this Office are carried out in Washington, D.C. and Michoud, Louisiana.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

Item	Actual 1972		Estimated Available 1973		Budget Estimate 1974	
	Amount	Man- Years	Amount	Man- Years	Amount	Man- Years
Office of Management Services:						
Appropriations.....	\$3,889,000	280	\$4,147,000	285	\$4,147,000	283
Obligations under other USDA						
appropriations:						
Management support services						
related to:						
Departmentwide supply,						
duplicating, data proces-						
sing and other services						
carried out under the Work-						
ing Capital Fund by agen-						
cies serviced by OMS.....	469,006	31	838,000	36	1,142,600	48
Special economic studies per-						
formed by the Economic						
Research Service for other						
agencies on a reimbursable						
basis.....	67,278	4	51,200	3	33,500	2
Special crop and livestock						
studies and data processing						
services performed by the						
Statistical Reporting Service:						
for other agencies on a reim-						
bursable basis.....	206,853	14	102,000	6	58,800	3
Reimbursements for supplies						
and duplicating services.....	17,120	- -	20,000	- -	20,000	- -
Miscellaneous reimbursable						
services.....	124,810	8	127,800	7	84,100	5
Total, Other USDA Appropri-						
ations.....	885,067	57	1,139,000	52	1,339,000	58
Total, Agricultural Appropri-						
ation Bill.....	4,774,067	337	5,286,000	337	5,486,000	341
Other Funds:						
Working Capital Fund for manage-						
ment support services provided:						
to various USDA organizations						
located at Michoud, Louisiana.	26,763	- -	754,000	42	800,000	42
Agency for International De-						
velopment:						
Administrative services to						
the Foreign Economic Develop-						
ment Service relating to:						
Training of foreign partici-						
pants.....	89,987	7	93,500	7	93,500	7
Technical Consultation.....	48,446	3	50,300	3	50,300	3
Special projects - Admin-						
istrative support costs.....	34,727	2	36,200	2	36,200	2
Total, Agency for International						
Development.....	173,160	12	180,000	12	180,000	12
Miscellaneous reimbursable						
services.....	9,477	- -	6,000	- -	6,000	- -
Total, Other funds.....	209,400	12	940,000	54	986,000	54
Total, Office of Management						
Services.....	4,983,467	349	6,226,000	391	6,472,000	395

OFFICE OF MANAGEMENT SERVICES

Appropriation Act, 1973 \$4,147,000
Budget Estimate, 1974 4,147,000

PROJECT STATEMENT

Project	:	1972	:	1973 (estimated)	:	1974 (estimated)
1. Management support activities.	:	\$3,827,296	:	\$4,147,000	:	4,147,000
Unobligated balance.....	:	61,704	:	- -	:	- -
Total available or estimate.....	:	3,889,000	:	4,147,000 <u>a/</u>	:	4,147,000

a/ Of this amount, \$6,000 has been withheld from use in 1973 principally from funds budgeted for travel.

OFFICE OF MANAGEMENT SERVICES

Appropriation Act, 1973 \$4,147,000
Budget Estimate, 1974 4,147,000

PROJECT STATEMENT

Project	:	1972	:	1973 (estimated)	:	1974 (estimated)
1. Management support activities.	:	\$3,827,296	:	\$4,147,000	:	4,147,000
Unobligated balance.....	:	61,704	:	- -	:	- -
Total available or estimate.....	:	3,889,000	:	4,147,000 _{a/}	:	4,147,000

_{a/} Of this amount, \$6,000 has been withheld from use in 1973 principally from funds budgeted for travel.

STATUS OF PROGRAM

The Office of Management Services was established by Secretary's Memorandum No. 1529, dated January 29, 1963. This Office provides consolidated management support services to twenty agencies and offices of the Department. Support functions of the Office include administrative services, budget and finance, information, personnel and related programs, and general management assistance.

To the maximum extent possible, the costs of management support for the agency programs are financed by direct appropriations to the Office of Management Services. Certain programs are performed by the twenty supported agencies for other agencies of the government on a reimbursable basis. The Office of Management Services receives a portion of these reimbursements to cover the costs of the management support services involved.

Agencies and offices served present a widely varied pattern of programs, professional skills, organization, and geographical location. Programs cover a broad range of activities. These include physical and biological science research, economic research, gathering and reporting of statistics, investigation and evaluation, auditing, library maintenance, commodity futures markets surveillance, and assistance to farmers' cooperatives and to general Departmental management. Professional skills include: physical and biological scientists, statisticians, lawyers, economists, hearing examiners, accountants, demographers, pathologists, home economists, sociologists, veterinarians, mathematicians, and management analysts. Organizational and geographical diversity is indicated by the services provided both to the Departmental policy staff offices in Washington and to various field staffs at approximately 170 locations.

The Office plays a positive role in management support of the agencies served. It designs and operates appropriate systems for financial, personnel, property and records management. It establishes and carries out balanced information programs for several of the agencies. Professional management advice is provided to agency personnel. The Office relieves agency personnel of as much of the operational details of management services as possible, recognizing that the final management responsibility rests with the key program officials in the agencies served.

Selected Examples of Recent Progress:

In its major functional areas, the Office provides the necessary support to the agencies served as represented by the following:

1. Accounting System Design -- The Accounting System Design Manual for the Departmental Working Capital Fund was formally approved by the Comptroller General of the United States on February 25, 1972.
2. Reorganization of Budget and Finance Division -- On October 10, 1972, our Budget and Finance Division was reorganized to establish a Working Capital Fund Branch. This Branch consolidates financial management functions formerly performed by the three other branches of the Division. The reorganization will benefit Working Capital Fund activity managers by permitting greater individual attention to financial aspects of their operations in the areas of planning, review and analysis, measuring performance and reporting.
3. Slide Sets -- Nation's Biggest Business -- Developed for the Economic Research Service a slide set/film strip, "The \$130 Billion Food Assembly Line," which outlines for nonfarm audiences the magnitude of the Nation's biggest business, the food industry. It points out the amount of land, livestock and other farm resources needed to feed and clothe us and our customers abroad; the number of farmers and workers in associated industries; and the fact that this assembly line from farmer to consumer accounts for more than one-tenth of the total value of all goods and services produced in the United States. Revised an ERS

slide set, "Revelations of a Register Tape," which explains to the housewife what determines her food bill. Since its first release in 1969, this set has been a "best seller."

4. Postal Costs Reduced -- News for Farmer Cooperatives is now being mailed under controlled circulation postal rates rather than first class in an effort to reduce postal costs. If the experiment proves successful, annual savings will be approximately \$30,000 to the Farmer Cooperative Service.
5. Weather-Crop Centennial -- Information support was provided for the observance of the 100th anniversary of the Weather-Crop Service, a joint effort of USDA's Statistical Reporting Service and the Commerce Department's National Oceanic and Atmospheric Administration. Activities included construction of an exhibit for display at the Smithsonian Institution's Agriculture and Mining Hall, special articles, press releases, television slides, clip art, poster, and an award ceremony and reception at which certificates of appreciation were presented to representative crop reporters, a county agent, and weather observer.
6. Statistical Stylebook -- Complete instructions for setting up and typing statistical tables are carried in "Preparing Statistical Tables," Agricultural Handbook 433, prepared for the Economic Research Service and the Statistical Reporting Service. The handbook also is widely used by other agencies as an authoritative guide to table preparation.
7. Move of Facilities -- OMS provided on-site direction and Washington support for a major facility move. The Department recently completed a project which involved a major realignment and relocation of functions and principal offices from central New Orleans to the NASA Michoud Assembly Facility there. Concurrent with the move, a new concept in computer management and a new organization designed to handle all voucher payments is being implemented. The move and related reorganizations involved Office of Budget and Finance, Office of Information Systems, Office of Plant and Operations, Agricultural Stabilization and Conservation Service and Office of Management Services.
8. OMS Field Office -- On April 27, 1972, a reorganization of support services was accomplished involving the establishment of an OMS Field Office at Michoud, Louisiana. This field office was established to provide management support services to various Departmental organizations located at Michoud.
9. Records Management -- Established a Functional Assistance Review program in records management. Under this program, OMS will visit serviced agencies and review their entire records management program. Based on these reviews, further studies will be scheduled if discrepancies exist.
10. Personnel Division -- Progress towards full implementation of the "generalist" approach adopted under our Personnel Division reorganization in fiscal year 1972 is progressing with most personnel specialists receiving on-the-job training in areas where previously many had had little exposure or training. In classification, wider use of standard jobs for entry level positions is planned for as a specific goal in the next year.
11. Program Development and Evaluation -- Some personnel management and organizational appraisal studies of organizations in the OMS-serviced agencies have been completed which resulted in the updating of various procedural and policy issuances.
12. Personnel Assistance -- On-site personnel assistance on a planned basis has increased considerably for organizational elements in other geographic locations. Funds appropriated by the Congress in fiscal year 1973 for improving services to Agency field offices through on-site assistance.

AGRICULTURAL RESEARCH SERVICE

Purpose Statement

The Agricultural Research Service was established by the Secretary of Agriculture on November 2, 1953, under the authority of the Reorganization Act of 1949 (5 U.S.C. 133z-15), Reorganization Plan No. 2 of 1953, and the other authorities. In 1971 the plant and animal disease and pest control activities were transferred to Animal and Plant Health Inspection Service. It conducts basic, applied, and developmental research in the fields of livestock, plant sciences, entomology, soil and water conservation, agricultural engineering, utilization and development, nutrition and consumer use, marketing and on the development of methods to eradicate narcotic producing plants.

The Service directs research mutually beneficial to the United States and the host country which can be advantageously conducted in foreign countries through agreements with the foreign research institutions and universities. This program is carried out under the authority of section 104(b) (1) and (3) of Public Law 480, the Agricultural Trade Development and Assistance Act of 1954, as amended.

The Service maintains central offices in the Washington Metropolitan Area, and operates the Agricultural Research Center at Beltsville, Maryland. However, most of the Service's work is conducted at numerous field locations in the 50 States, Puerto Rico, the Virgin Islands, and in several foreign countries. Much of the work is conducted in cooperation with, or under contracts and grants to, the State agricultural experiment stations, State Departments of Agriculture, and other agencies, both public and private.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

	1972		Estimated 1973		Estimated 1974	
	Amount	Man- Years	Amount	Man- Years	Amount	Man- Years
Agricultural Research						
Service:						
Salaries and Expenses:	a/		a/			
Appropriation	\$174,740,178	9,398	\$188,025,600	9,185	\$170,790,000	8,907
Transfer from						
Section 32 funds ..	15,000,000		15,000,000		15,000,000	
Salaries and ex-						
penses (Special						
Foreign Currency						
Program)	10,000,000	17	10,000,000	17	10,000,000	17
Total	199,740,178	9,415	213,025,600	9,202	195,790,000	8,924
Deduct allotments						
to other agencies	-609,236	-14	-837,000	-14	987,000	-14
Net	199,130,942	9,401	212,188,600	9,188	194,803,000	8,910
Obligations under						
other USDA						
appropriations:						
Animal and Plant						
Health Inspection:						
Service -						
Sharing of field						
station expenses						
and other miscel-						
laneous service ..	1,682,103	93	2,024,323	117	2,092,000	120
Food and Nutrition:						
Service-Technical:						
assistance on						
nutrition in the:						
school lunch						
program	111,073	8	130,700	8	130,700	8
Recipe develop-						
ment and food						
quality research:						
for needy family:						
program	50,825	4	79,100	6	79,100	6
Soil Conservation						
Service-Sharing						
of field station						
expenses at vari-						
ous locations,						
research on trap						
efficiency, and						
other conserva-						
tion problems ...	28,929	1	30,860	1	30,860	1
Commodity Credit						
Corporation Con-						
struction of re-						
search facilities:	185,729	- -	686	- -	- -	- -

a/ Excludes \$2,000,000 reappropriation.

Item	1972		Estimated 1973		Estimated 1974	
	Amount	Man Years	Amount	Man- Years	Amount	Man- Years
Other work for						
USDA agencies:						
Maintenance and						
operation of						
civil defense						
facilities	79,039:	5:	23,085:	2:	25,000:	2
Use of Facilities:						
USDA Training						
Center, Front						
Royal, Virginia	43,677:	- - :	47,219:	- - :	40,000:	- -
Computer Services:						
National Agri-						
cultural Library:	14,000:	1:	130,000:	5:	130,000:	5
Foreign research						
and translation						
programs under						
P.L. 480	20,450:	1:	28,494:	1:	28,700:	1
Miscellaneous						
activities	24,283:	2:	7,590:	1:	7,590:	1
Total, Other						
USDA Appropria-						
tions	2,240,108:	115:	2,502,057:	141:	2,563,950:	144
Total, Agricultural						
Appropriation Bill ...	201,371,050:	9,516:	214,690,657:	9,329:	197,366,950:	9,054
Working Capital Fund:						
Services at the Agri-						
cultural Research						
Center:						
For USDA agencies ..	5,765,371:	328:	5,894,000:	326:	5,944,000:	326
For other than						
USDA agencies	627,810:	23:	642,000:	22:	647,000:	22
Total, Working						
Capital Fund	6,393,181:	351:	6,536,000:	348:	6,591,000:	348
Other Funds:						
Forest Service:						
Foreign research						
and translation						
programs under P.L.						
480 and other work	66,761:	4:	77,079:	4:	77,142:	4
State of California:						
Department of Water						
Resources:						
Studies on aquatic						
weeds in large ir-						
rigation canals and						
ground water re-						
charge	19,205:	1:	12,700:	1:	17,700:	1
Idaho Bean Commission						
Studies on harvesting						
garden bean seeds ...	3,004:	- - :	- -	- - :	- -	- -
Agency for Internation-						
al Development:						
Training of foreign						
nationals	89,951:	5:	80,900:	5:	80,900:	5
Technical consulta-						
tion and support	18,073:	1:	13,900:	1:	13,900:	1
Special projects	1,129,075:	42:	1,101,800:	39:	1,025,400:	36

Item	1972		Estimated 1973		Estimated 1974	
	Amount	Man- Years	Amount	Man- Years	Amount	Man- Years
Detail of personnel	70,508:	2:	37,700:	1:	10,000:	1
Total, Agency for	:	:	:	:	:	:
International	:	:	:	:	:	:
Development	1,307,607:	50:	1,234,300:	46:	1,130,200:	43
Technical services	:	:	:	:	:	:
and research as	:	:	:	:	:	:
follows:	:	:	:	:	:	:
Department of	:	:	:	:	:	:
Defense	435,830:	14:	488,200:	19:	413,500:	16
Department of	:	:	:	:	:	:
Interior	184,952:	6:	177,837:	7:	177,837:	7
Department of Health,	:	:	:	:	:	:
Education and	:	:	:	:	:	:
Welfare	481,140:	16:	490,976:	18:	440,000:	16
Atomic Energy Commis-	:	:	:	:	:	:
sion	167,485:	5:	146,100:	6:	146,100:	5
National Aeronautics	:	:	:	:	:	:
and Space Adminis-	:	:	:	:	:	:
tration	233,527:	8:	231,700:	9:	230,000:	9
National Science	:	:	:	:	:	:
Foundation	32,786:	1:	138,400:	5:	30,300:	1
Environmental Protec-	:	:	:	:	:	:
tion Agency	589,216:	19:	461,200:	17:	461,200:	17
General Services	:	:	:	:	:	:
Administration	15,418:	1:	16,030:	1:	16,648:	1
Total	2,140,354:	70:	2,150,443:	82:	1,915,585:	72
Proceeds from the sale	:	:	:	:	:	:
of animals, equipment,	:	:	:	:	:	:
motor vehicles, etc ..	176,415:	- - :	194,457:	- - :	199,100:	- -
Miscellaneous	:	:	:	:	:	:
contributed funds	:	:	:	:	:	:
under cooperative	:	:	:	:	:	:
agreements	375,772:	7:	429,000:	8:	417,000:	8
Miscellaneous	:	:	:	:	:	:
services, supplies	:	:	:	:	:	:
and travel	230,272:	2:	43,070:	2:	33,300:	2
Total, Other Funds	4,319,390:	134:	4,146,049:	143:	3,790,027:	130
Total, Agricultural	:	:	:	:	:	:
Research Service	212,083,621:	10,001:	225,372,706:	9,820:	207,747,977:	9,532

(a) Agricultural Research Service

Appropriation Act, 1973:

Direct appropriation	\$188,036,600
Transfer from Section 32 funds	<u>15,000,000</u>
Total, Appropriation Act, 1973	203,036,600 a/
Budget Estimate, 1974	<u>185,790,000</u> a/
Decrease in appropriation	-17,246,600

Adjustments in 1973:

Appropriation Act, 1973	\$203,036,600
Transfer to General Services Administration for rental of space	<u>-11,000</u>
Adjusted base for 1974	203,025,600
Budget Estimate, 1974	<u>185,790,000</u>
Decrease in appropriation (adjusted)	-17,235,600

a/ Excludes reappropriation of \$2,000,000 of prior year funds for additional labor, subprofessional and junior scientific help in the field.

SUMMARY OF INCREASES AND DECREASES
(on basis of adjusted appropriation)

	<u>1973</u>	<u>Increase or Decrease</u>	<u>1974 Estimate</u>
<u>Program changes:</u>			
Special bicentennial improvements at the National Arboretum	- -	+\$1,130,000	\$1,130,000
All other	<u>\$199,565,600</u>	<u>-14,905,600</u>	<u>184,660,000</u>
Subtotal, Program	199,565,600	-13,775,600	185,790,000
<u>Facilities changes:</u>			
Elimination of non-recurring items included in 1973	<u>3,460,000</u>	<u>-3,460,000</u>	<u>- -</u>
Total available	<u>203,025,600</u>	<u>-17,235,600</u>	<u>185,790,000</u>

PROJECT STATEMENT
(on basis of adjusted appropriation)

Project	1972	1973 (estimated)	Increase or Decrease	1974 (estimated)
<u>I. Farm research:</u>				
(a) Animal science	\$12,655,531	\$13,762,000	-\$2,377,000	\$11,385,000
(b) Veterinary sciences	18,838,509	20,049,700	-954,700	19,095,000
(c) Plant science	40,137,646	42,098,200	-3,251,500	38,846,700
(d) Entomology	27,213,609	28,573,600	-2,268,600	26,305,000
(e) Soil and water conservation	22,169,851	23,044,100	-1,322,000	21,722,100
(f) Agricultural engineering ..	<u>8,631,676</u>	<u>8,964,700</u>	<u>-396,700</u>	<u>8,568,000</u>
Total, Farm research	<u>129,646,822</u>	<u>136,492,300</u>	<u>-10,570,500</u>	<u>125,921,800</u>

Project	1972	1973 (estimated)	Increase or Decrease	1974 (estimated)
2. <u>Utilization research and development:</u>				
(a) Cereal and forage crops ..	8,914,451:	9,483,300:	-352,700:	9,130,600
(b) Cotton, wool, and other fibers	7,601,192:	8,072,300:	-150,000:	7,922,300
(c) Fruits and vegetables	7,080,912:	8,114,900:	-578,000:	7,536,900
(d) Oilseeds	5,537,687:	5,769,400:	-311,000:	5,458,400
(e) New and special plants ...	3,587,897:	3,621,000:	-604,900:	3,016,100
(f) Poultry, dairy, and animal products	8,569,525:	9,294,400:	-528,000:	8,766,400
Total, Utilization research and development	41,291,664:	44,355,300:	-2,524,600:	41,830,700
3. <u>Nutrition and consumer use:</u>				
(a) Human nutrition	3,406,907:	4,463,600:	-601,600:	3,862,000
(b) Consumer and food economics	1,793,836:	1,610,900:	- - :	1,610,900
Total, Nutrition and consumer use	5,200,743:	6,074,500:	-601,600:	5,472,900
4. <u>Marketing research:</u>				
(a) Market quality	7,900,274:	8,313,000:	-600,500:	7,712,500
(b) Transportation and facilities	3,131,971:	3,066,800:	-252,700:	2,814,100
Total, Marketing research	11,032,245:	11,379,800:	-853,200:	10,526,600
5. <u>Research and development on the eradication of narcotic-producing plants</u>	1,588,144:	2,105,700:	-355,700:	1,750,000
6. <u>Coordination of departmental and interdepartmental activities relating to pests and their control</u>	79,267:	158,000:	- - :	158,000
7. <u>Construction of facilities</u> ..	70,000:	3,460,000:	-3,460,000:	- -
8. <u>Contingency research fund</u> ..	- - a/:	1,000,000:	- - :	1,000,000
9. <u>Special bicentennial improvements at the National Arboretum</u>	- - :	- - :	+1,130,000:	1,130,000
Unobligated balance	2,831,293:	- - :	- - :	- -
Subtotal	191,740,178:	205,025,600:	-17,235,600:	187,790,000
Deduct reappropriation for Special Fund	-2,000,000:	-2,000,000:	- - :	-2,000,000
Total, available or estimate ..	189,740,178:	203,025,600:	(1)-17,235,600:	185,790,000
Transfer to General Services Administration	+6,322:	+11,000:		
Transfer to the Executive Office of the President for Economic Stabilization Activities	+2,000,000:	- - :		
Total, appropriation	191,746,500:	203,036,600 b/		

a/ Obligations of \$910,637 of the \$1,000,000 appropriated in 1972 are included in the projects above.

b/ Of this amount \$416,000 has been withheld from use in 1973 principally from funds budgeted for travel.

INCREASES AND DECREASES

(1) A net decrease of \$17,235,600 for research consisting of:

(a) An increase of \$1,130,000 for special bicentennial improvements at the National Arboretum. (No funds available in 1973)

Need for Increase: On February 4, 1972, President Nixon sent to the Congress a message on Bicentennial plans for the Washington area. The following was included: "Also within the Anacostia Basin, improvements will be carried out at the National Arboretum." Owing to the Bicentennial celebration and the large number of visitors expected in the Washington, D. C. area, the development of the National Arboretum would afford an unusual opportunity to acquaint the public with the role of plants in the environment, in agriculture, and in everyday life. Increasing urbanization has brought with it a wide, broadening, and basic need for education in plant use. With the necessary road changes, and other improvements, the Arboretum can provide wide variety of living exhibits in landscapes and plantings.

Under present circumstances, about 500,000 people visit the Arboretum annually. It is expected that due to the greater number of visitors anticipated during the Bicentennial year, that additional improvements are necessary to accommodate the increase in visitors. Most of these visitors are the general public who come to see the present plantings. However, scientists also visit to see the exotic plants and the limited landscaping portrayed.

Plan of Work: The proposed amount would provide for necessary facilities, landscaping, and extensive plantings of exotic and native flora and other improvements at the National Arboretum as part of the Bicentennial plans for the Washington area. These special improvements would accommodate an expected influx of 900,000 visitors during the Bicentennial year. Initial plans for implementing these improvements would occur during fiscal year 1974 and construction of road and parking facilities and extensive plantings would occur in 1975 and the Bicentennial year.

(b) A decrease of \$14,905,600 from 1973 appropriations. (\$199,565,600 available in 1972).

Basis of Decrease: The reductions proposed are based on an overall reassessment of research programs in order to concentrate research resources in high priority areas. Despite the reductions proposed, quality of research will be maintained through the consolidation of research projects; improved coordination of research activities of the Department with those of the State experiment stations, schools of forestry and land-grant colleges of 1890; and through the termination of completed research projects and low priority research.

Plan of Work: The research activities of the Department have been reevaluated in order to provide for maximum utilization of research dollars and manpower in carrying out high priority research activities. In conducting this evaluation, research projects were terminated or reduced in those instances where:

- Work was essentially completed;
- no further significant research results applicable to current agricultural problems are likely to be achieved in the near future;
- facilities at which projects are conducted are inadequate;
- animals used for research, but which were provided by cooperating institutions, are no longer available for this purpose;
- projects which are underway at one research location essentially would duplicate efforts at other research locations if continued;
- basic research results have been achieved faster than the information can be used for applied research;
- research has reached the stage where commercial organizations can handle and assume the work;
- production and markets for particular commodities have declined;
- consolidation of related projects in a particular location will result in a more efficient operation;
- automation will result in reduced funds required to continue with the same level of work.

In the 1973 appropriation, increases amounting to \$10,423,600 were provided for additional research projects. Of this amount \$8,048,000 has been withheld from

use in 1973 and is not being requested for 1974. An additional \$1,469,900 authorized in the 1973 Act will be used in 1973 primarily for contracts and agreements with cooperating institutions. These funds also are not requested for 1974. The use of these funds will be spread over two or three years and therefore the benefits to be derived will be available in subsequent years. In addition to these reductions, it is proposed to reduce on-going research programs by \$5,387,700. The reductions by project in each of these two categories are shown below:

<u>Projects</u>	New Research		<u>Total</u>
	<u>Authorized in 1973</u> <u>Appropriation Act</u>	<u>Reduction in On-</u> <u>going Programs</u>	
Animal science	\$1,879,400	\$497,600	\$2,377,000
Veterinary sciences	420,700	534,000	954,700
Plant science	1,885,500	1,366,000	3,251,500
Entomology	1,597,400	671,200	2,268,600
Soil and water conservation ...	710,500	611,500	1,322,000
Agricultural engineering	171,000	225,700	396,700
Total, Farm research	<u>6,664,500</u>	<u>3,906,000</u>	<u>10,570,500</u>
Cereal and forage crops	308,600	44,100	352,700
Cotton, wool, and other fibers	- -	150,000	150,000
Fruits and vegetables	578,000	- -	578,000
Oilseeds	50,000	261,000	311,000
New and special plants	- -	604,900	604,900
Poultry, dairy, and animal products	<u>324,500</u>	<u>203,500</u>	<u>528,000</u>
Total, Utilization and devel- opment	<u>1,261,100</u>	<u>1,263,500</u>	<u>2,524,600</u>
Human nutrition	601,600	- -	601,600
Consumer and food economics ...	- -	- -	- -
Total, Nutrition and consumer use	<u>601,600</u>	<u>- -</u>	<u>601,600</u>
Market quality	427,800	172,700	600,500
Transportation and facilities .	<u>207,200</u>	<u>45,500</u>	<u>252,700</u>
Total, Marketing	<u>635,000</u>	<u>218,200</u>	<u>853,200</u>
Research and development on the eradication of narcotic-pro- ducing plants	<u>355,700</u>	<u>- -</u>	<u>355,700</u>
Total	<u>9,517,900</u>	<u>5,387,700</u>	<u>14,905,600</u>

(c) A decrease of \$3,460,000 to eliminate nonrecurring increases provided in 1973 for planning and construction of research facilities. Funds for the following items will not be needed in 1974:

<u>Item</u>	<u>Amount</u>
Grassland and Forage Research Center at Temple, Texas (complete construction)	\$500,000
Soil and Water Research Facility at Akron, Colorado (construction)	750,000
Soil and Water Research Facility at Beckley, W. Va. (construction)	700,000
Plum Island Animal Disease Laboratory, Plum Island, New York (planning the construction of additional facilities)	250,000
Air Pollution abatement and sewage control at Plum Island Animal Disease Laboratory, Plum Island, New York (planning and construction)	1,060,000
Northeastern Appalachian Region Fruit Crop Laboratory (planning of construction)	200,000
	3,460,000

STATUS OF PROGRAM

The Agricultural Research Service carries out the Department's scientific research on livestock, crops, soil and water conservation, agricultural engineering, utilization research and development, nutrition and consumer use, and marketing. It conducts basic, applied and developmental research. The research applies to a wide range of goals, commodities or natural resources, fields of science, research problem areas; and geographic, climatic, and environmental conditions. It is identified with approximately 500 research activities.

Research is conducted at the Agricultural Research Center, Beltsville, Maryland, and at numerous locations in the States, Puerto Rico, and in several foreign countries. A large part of the research is in cooperation with State agricultural experiment stations and other public and private agencies. Research is also conducted under contracts, grants, and cooperative agreements with various public and private agencies and institutions.

As a part of its regular programs, the Agricultural Research Service conducts research to aid in preventing or combating foreign plant and animal diseases which might be introduced into the United States.

FARM RESEARCH

Current activities: Investigations are conducted on production methods and improvement of field and horticultural crops and of farm livestock, poultry, and domestic fur animals, including means of control of plant and animal pests and diseases, which will be effective, economical, and avoid residue hazards. Soil and water conservation research is conducted to develop new and improved soil and crops management practices, improve irrigation and drainage methods, develop information on watershed hydrology, and determine the relationship of soils to plant and animal nutrition. Engineering studies are made to improve the mechanization of crop and livestock production and the harvesting and processing of farm crops, to develop better types of farm structures and new uses for electricity on farms, and to adapt labor saving equipment to farm use.

Farm research has been continuously reviewed to emphasize work which would assure a continuing balanced and adequate supply of agricultural products with variety sufficient to allow a desirable level of opportunity for choice on the part of the consumer, to meet the problems of market demands, and to reduce cost of production. With increased funds in recent years, emphasis is being given to new means of dealing with plant and animal pests that will eliminate or reduce undesirable effects on our environment. Attention has also been given to health-related tobacco research and to investigations of the possible and potential deleterious effects of molds occurring on agricultural products. Also increased attention has been given to studies to protect plants, animals, and natural resources from harmful effects of soil, water, and air pollutants. Research conducted is also concerned with the application of remote sensing techniques in meeting agricultural problems.

FARM RESEARCH

Selected Examples of Recent Progress:

Index of selected examples of recent progress. A description of these examples follows this index.

Animal Science Research

1. Increased reproductive efficiency by early weaning in beef cattle
2. Improved feed utilization by pregnant swine
3. New ultra-practical method of diagnosing pregnancy and fetal number in sheep
4. Sonic booms (actual and simulated) not damaging to livestock
5. Dairy steers contribute to meat supply
6. Effect of sex condition on growth and carcass traits of beef cattle
7. Domestic milk replacer equal to imported product for rearing lambs
8. Calving difficulty lowers profits in beef cattle by increasing calf mortality and decreasing subsequent conception rate
9. Unsaturated fat content of milk increased by feed constituents
19. Hybrid sunflower production made possible by the release of genetic male-sterile and restorer stocks
20. South American weevil introduced to control waterhyacinth
21. Potent plant dwarfing chemical isolated from a fungus
22. New levels of cold tolerance introduced in sugarcane
23. Improved forage quality means better animal performance
24. Bridge crossing introduces new disease resistance from wild relative into cultivated tobacco
25. New herbicide selectively controls difficult-to-control weeds in soybeans
26. Ultra high frequency (UHF) electromagnetic energy for nematode and weed control in vegetables
27. Increase in overall growth and fruitfulness of crop plants with hormones from rape pollen
28. New hop variety released with quality characteristics of imported hops

Veterinary Sciences Research

10. Venezuelan equine encephalomyelitis (VEE) vaccine
11. Use of anaplasmosis modified card test (MCT) extended
12. New treatment for liver tapeworm infections in range sheep
13. Clinicopathologic and preventive aspects of livestock poisoning by plants
14. Improved method for testing for avian salmonella infections
15. Sleepy grass has temporary narcotic affect on cattle

Plant Science Research

16. Resistance to Aspergillus flavus discovered in peanuts
17. Long-term use of herbicides increases yields and returns from corn and soybeans
18. Early lodging identified as a major barrier to higher soybean yields

Entomology Research

30. European insect enemies of thistles established in the United States
31. Release of insect resistant varieties of alfalfa and wheat
32. Parasites reduce cereal leaf beetle populations
33. Suppression of the tobacco hornworm by the sterile male technique demonstrated
34. New method devised to detect Comstock mealybug
35. Insect parasites promising for control of pink bollworms
36. Potent juvenile hormone mimic for insect control
37. Host-seeking stimulant for insect parasites identified

38. Potential commercial cell culture of insect virus control agents
39. Method of residue analysis developed for synthetic pyrethroid insecticides
40. Tobacco stalk cutting reduces hornworm and budworm infestation
41. New pesticides and formulations for aircraft disinsectization

Soil and Water Conservation Research

42. Laboratory method developed to evaluate the nitrogen mineralization potential of soils
43. Intermittent flooding is best for leaching saline soils
44. Brush control herbicides do not contaminate ground or surface water supplies
45. Terraces with tile outlets control sediment and conserve water
46. Constant water tables boost yields and longevity of sugarcane
47. Mathematical model developed to predict winter wheat performance
48. Bovine fat necrosis linked to high nitrogen fertilization of tall fescue pastures
49. Plant residues immobilize nitrogen and prevent leaching

50. Season of the year affects heavy metal uptake by plants grown on sewage sludge or garbage mulch
51. Alternating strips of grain sorghum and winter wheat leads to more efficient use of limited irrigation water
52. Storm hydrograph model based on the dynamic watershed or partial-contributing area concept of storm runoff has been developed
53. Mineral weathering is a major factor affecting the solute concentration in drainage water
54. Nutrient loss can be high even on no-till plots
55. Irrigated project exerts strong "oasis" effect on lower atmosphere

Agricultural Engineering Research

56. Design of a system for pallet handling and field storage of seed cotton
57. Development of bulk handling system for mechanically harvested concord grapes
58. Development of peanut digger and salvager
59. Runoff of unpaved beef feedlots
60. Improved dairy cow environment
61. Mechanical harvesting and handling of cucumbers

Animal Science Research

1. Increased reproductive efficiency by early weaning in beef cattle. In studies at Beltsville, Maryland, and Clay Center, Nebraska, weaning one week before a 42-day (two-estrus cycle) breeding period increased pregnancy rates by 16 percent in fall-calving cows. The differences due to weaning were greatest in younger cows, with pregnancy rates increased by 26 percent in 2-year-olds, 16 percent in 3-year-olds, and 8 percent in mature cows. Gains in calves weaned at 8, 16, or 24 weeks of age were not different up to one year of age. Early weaning may be an effective management tool for young or late-calving cows or in fall-calving systems in colder regions, particularly where utilization of crop or pasture residues is possible with a cow herd. Emergency drouth situation or semi-confinement management systems may make early weaning an efficient management practice.
2. Improved feed utilization by pregnant swine. Results of experiments at Beltsville, Maryland, demonstrated that the amount of feed used in current feeding practices for pregnant swine can be reduced. Currently 4.5 pounds of feed are recommended per animal daily. This could be reduced to 3.5 to 4.0 pounds a day without any detrimental effect. The excess weight gained during gestation is costly to the producer in terms of feed costs. If implemented, the reduced feed intake would result in a substantial savings to the swine producer. On a national basis, a reduction in one pound of feed per pregnant sow per day would result in an annual savings of approximately \$80 million in feed costs.

3. New ultra-practical method of diagnosing pregnancy and fetal number in sheep. A rectal-abdominal palpation technique, using a plastic rod, has been developed at Beltsville, Maryland, and Dubois, Idaho, that has been found to be the most rapid and accurate method for diagnosing pregnancy in ewes. Pregnancy was detected as early as 43 days after breeding and the method appears to be virtually 100 percent accurate by 65 to 70 days after breeding. The ewe must be turned on her back, but 200 or more ewes per hour can be examined. The method can also be used to determine fetal number. Accuracy in predicting number of lambs was slightly better than 85 percent. Use of these methods will increase efficiency of production. Farmers can now decide whether to dispose of non-pregnant ewes, rebreed them or to feed them a maintenance diet. Often the ewes can be disposed of at a higher price than at the time they can now be detected. Single- or twin-bearing ewes can be handled and fed accordingly. Also, it is now possible to identify twin-bearing ewes before lambing so they can be selected for twinning even though they cannot be observed or recorded at actual lambing time.
4. Sonic booms (actual and simulated) not damaging to livestock. In tests at Mitkof Island, Alaska, through the cooperation of the U.S. Department of Defense, sonic booms from supersonic U.S. Air Force planes had no harmful effects on mink. Treated animals received three booms of approximately 6 pounds per square foot overpressure over a 60-minute period on a day selected when approximately 40 percent of the females had whelped. There were no significant effects on death rate of kits, gestation length, or number of kits born alive to females whelping after the booms. Kit weight at 49 days was not affected. Mink were alerted by the booms, but there was no panic or other adverse behavior. At another location in Alaska, simulated booms, also of 6 pounds per square foot overpressure, were likewise without significant effects on mink. In tests at Beltsville, Maryland, simulated booms of 4 pounds per square foot overpressure with cattle of several ages, and with ponies, resulted in short periods of alerting and orienting responses. Animals returned to normal behavior in 1 to 2 minutes. Responses to a second boom were less than to the first. There were no apparent effects on animal health.
5. Dairy steers contribute to meat supply. As a phase of research on beef production at Beltsville, Maryland, studies were made comparing performance of Holstein-Friesian and Hereford steers finished on a full feed fattening ration. The steers were started on feed at 180 days of age. The Holstein steers were 518 days old and weighed 1,219 pounds and the Hereford steers 554 days old and weighed 1,014 pounds when slaughtered. The Holstein steers ate only 116 pounds more feed during the fattening period. The average daily gain for the Holstein steers was 2.2 pounds and the Hereford steers was 1.9 pounds. The dressing percentage and the area of rib-eye in square centimeters, respectively, were 56 and 65 for the Holstein steers and 61 and 63 for the Hereford steers. Holstein steers had more lean and less fat in the carcasses than Herefords. The overall desirability of the carcass and the tenderness scores of the meat were essentially the same. It appears that steers of the Holstein breed will produce acceptable carcasses and perform as well, if not superior, in the feedlot as the Hereford breed. Thus, the dairy steers as represented by the Holstein-Friesian can be looked to as an important source of beef.
6. Effect of sex condition on growth and carcass traits of beef cattle. When slaughtered at 15 to 16 months of age, bulls and induced cryptorchid (short scrotum) males gain faster and produce leaner carcasses than steers. Although carcasses from these animals grade lower by present USDA quality grade standards, trained taste panelists were unable to detect important sex treatment (bulls, short scrotum males, and steers) differences in flavor, juiciness or overall acceptability of cooked steaks. This and other studies at Clay Center, Nebraska, have generally showed that young bulls will produce 25 to 40 percent more lean meat per unit of total digestible nutrients consumed than steers.

7. Domestic milk replacer equal to imported product for rearing lambs. Previous work had indicated that an imported milk replacer was practically equal to ewe's milk. Comparisons were made at Beltsville, Maryland, to determine if as good performance could be obtained with a domestic product. Replacers contain on a dry weight basis up to 30 percent homogenized animal and vegetable fat with emulsifiers and dried skim milk supplemented with vitamins and minerals. The replacers were reconstituted to contain 20 percent solids by weight and were allowed free choice at 4°C until the lambs were weaned abruptly at an average of 31 days of age. Average daily consumption and gain were slightly higher for the imported milk replacer. Feed conversion and gain to 51 days did not differ significantly. The lower cost of the domestic product, in addition to its fairly equal performance, aids in making the artificial rearing of lambs practical. The use of fresh milk replacer for lambs is doubling annually. The weaning of lambs on fresh milk replacer soon after birth permits the marketing of many lambs that would die if left on their mothers. This reduction in lamb losses represents an important increase in efficiency of production.
8. Calving difficulty lowers profits in beef cattle by increasing calf mortality and decreasing subsequent conception rate. Calving difficulty severe enough to require mechanical assistance at birth increased calf mortality nearly four times in an extensive study at Clay Center, Nebraska--from 5 to 19 percent. Percentage of cows conceiving during a subsequent 70-day breeding season was 16 percent lower in cows with calving difficulty than in those that had calved normally. Calf size is a major factor in calving difficulty and is of greatest importance in young cows. Calving difficulty can be minimized by using sires of breeds with large mature weights only on mature cows. Close attention at calving has been showed to reduce calf losses by as much as 50 percent in cows experiencing difficulty. Neither forced exercise, induced early calving, nor lowered nutritional levels of cows late in pregnancy have reduced calving difficulty in studies to date.
9. Unsaturated fat content of milk increased by feed constituents. Research to adjust the composition of milk to more nearly meet current consumer needs is underway at Beltsville, Maryland. Using a principle first demonstrated by Australian scientists, researchers have been able to increase the percentage of unsaturated fatty acids in milk fat produced by cows fed rations containing protein encapsulated safflower oil. Safflower oil and casein are treated with formaldehyde. The oil is encapsulated in a coating of the casein. When this material was fed in an otherwise normal ration in amounts of about 480 grams of the oil per day, the milk fat produced contained 13.6 percent unsaturated fatty acids. The cows on the normal ration produced milk fat with 2.7 percent unsaturated fatty acid. The cows remained healthy and there were no other effects on the yield of milk, fat, and protein. Production studies are continuing, as well as research on the flavor, quality, and questions concerning the manufacturing of milk products. Studies are also underway to find lower cost oils to use in feeding. These findings may provide a way for dairymen to produce milk of a higher content of unsaturated fats for consumers who desire it.

Veterinary Sciences Research

10. Venezuelan equine encephalomyelitis (VEE) vaccine. Horses were vaccinated with VEE vaccine at the Denver Animal Disease Research Laboratory and their antibody responses were compared to their resistance to infection with virulent virus. In every case, those horses given the minimum recommended dose of vaccine were refractory to infection. Antibody titers correlated well with this resistance. The attenuated live-virus (TC-83) VEE vaccine was serially back-passaged using five groups of five horses each. During back-passage, clinical responses of horses increased in frequency and severity with a corresponding higher viremia, but reversion to the original virus virulence did not occur. Forty-five horses inoculated with VEE vaccine (TC-83) had no evidence of permanent gross or microscopic damage to either the brain or spinal cord when examined between 5 and 49 days after vaccination.

11. Use of anaplasmosis modified card test (MCT) extended. An evaluation of the anaplasmosis MCT was conducted at Beltsville, Maryland, on serum and plasma samples from cattle with natural or experimentally induced Anaplasma marginale infections. The agreement between the results of the MCT and the complement fixation test was 97 percent on samples from naturally infected cattle. The agreement between the same tests was 100 percent on samples from experimentally infected cattle. Since the MCT is a rapid diagnostic procedure that can be carried out at the ranch, immediate identification and separation of infected cattle can now be done without having to wait the several days for results as was previously required by the complement fixation test.
12. New treatment for liver tapeworm infections in range sheep. Cambendazole, a compound shown to be effective in removing roundworms and intestinal tapeworms from cattle and sheep, has also been demonstrated in studies at Las Cruces, New Mexico, to be very effective in removing the liver tapeworm from sheep. This tapeworm (Thysanosoma actinioides) is harbored by over 50 percent of the range sheep in New Mexico, Colorado, and Wyoming, and is known to occur in most of the other Western States as well. It parasitizes wild ruminants, as well as domestic sheep. This tapeworm causes marked changes in the bile ducts and is responsible for significant losses due to liver condemnations under meat inspection procedures. With these new findings concerning cambendazole, it is now clear that the compound has the broadest spectrum of any anthelmintic used to treat parasitisms of ruminants, being effective against lungworms, gastro-intestinal roundworms, intestinal tapeworms, and tapeworms of the liver.
13. Clinicopathologic and preventative aspects of livestock poisoning by plants. Tall larkspur (Delphinium spp.) causes more death losses in cattle than any other poisonous range plant affecting cattle. In studies at Logan, Utah, through the use of enzyme activators and antitoxinants, as rumen flora stimulants, mixed in the salt supplement, larkspur losses in cattle were reduced. When put into practice, this finding will make more rangeland available to cattle for grazing, make a poisonous plant a valuable forage plant, require less man-hours to keep cattle away from the larkspur infested range areas, and make possible the implementing of systematic range rotation grazing systems.
14. Improved method for testing for avian salmonella infections. A microtest system developed at the Southeast Poultry Research Laboratory, Athens, Georgia, using tetrazolium-stained antigen preparations has been successfully adapted to the serological detection of chickens and turkeys infected with several types of salmonella infections. Microagglutination test equipment affords multiple simultaneous deliveries of very small reagent volumes in disposable test plates. It takes no more time to set up tests by the micromethod than by conventional methods and less time to read test results. There is considerable space saving, since plates to conduct 10,000 tests can be stored in an area 13 x 11 x 8 inches. This system for blood-testing chicken and turkey flocks for pullorum-typhoid and typhimurium was approved in 1972 for official use under the National Poultry and Turkey Improvement Plans. Present cost of conducting laboratory tests for salmonella infections is about \$0.07 per test. Use of the microtest cuts this cost more than one-half. Considering that approximately 8,000,000 laboratory blood tests for salmonella infections in chickens and turkeys are conducted in the U.S. each year, use of the microtest could save producers as much as \$300,000 annually.
15. Sleepy grass has temporary narcotic affect on cattle. Sleepy grass (Stipa rugosa) is a plant found in higher altitudes of New Mexico, Texas, and Arizona. The plant has narcotic properties that are manifested by sleepiness, especially in horses. In a test on location, it was found that cattle are susceptible to the grass and become quite lethargic after grazing it. At the Poisonous Plant Laboratory, Logan, Utah, it was found that if confined cattle are fed only sleepy grass overnight, they absolutely refuse to graze it on recovery. Since native animals rarely, if ever, are affected by this plant simply because they avoid it, the problem lies with newly introduced animals. From these studies, it is apparent such new animals could be fed the plant and held under observation overnight, and thereafter they would not eat the plant.

Plant Science Research

16. Resistance to *Aspergillus flavus* discovered in peanuts. Research at Auburn, Alabama, and research under cooperative agreement at Gainesville, Florida, have identified genetic lines of peanuts which show a high degree of resistance to infection by *Aspergillus flavus*, the organism primarily responsible for the production of aflatoxins in peanuts. Resistant lines have shown as low as 1 percent seed infection for hand harvested and hand shelled samples compared to 85 percent seed infection for susceptible lines and 49 percent seed infection for one of the commercially grown peanut varieties. Research is currently underway to identify the mechanism of this resistance, the inheritance of this resistance, and to incorporate this resistance into commercially acceptable peanut varieties.
17. Long-term use of herbicides increases yields and returns from corn and soybeans. Long-term average returns per acre from rotated crops can be increased by \$11 to \$26 when herbicides supplement cultivations. In a 6-year study at Urbana, Illinois, ARS and State weed scientists have determined that in a corn-corn-soybean rotation, the average net return per acre has been \$35.46 where cultivation alone has been used to control weeds. Where herbicides were used in combination with one cultivation, the net return was \$55.62 per acre for an increase of \$20.16 over cultivation alone. In a corn-soybean-wheat rotation, the average net return per acre for 6 years has been \$33.82 where cultivation alone has been used for weed control in the corn and soybean crops. Where herbicides were used with one cultivation, the net return was \$45.47, for an increase of \$11.65 per acre over cultivation alone. Where corn was grown continuously and only cultivation used to control weeds, the net return per acre was \$8.31. Where herbicides were used in combination with one cultivation, the net return was \$34.41 per acre.
18. Early lodging identified as a major barrier to higher soybean yields. Research at the U.S. Regional Soybean Laboratory, Urbana, Illinois, on highly productive soils, indicates that currently grown soybean varieties tend to make excessive vegetative growth and lodge (fall over) in early August. Using a wire support system to prevent lodging has resulted in as much as 27 percent increase in seed yield (55 versus 70 bushels per acre). Early lodging reduces light use efficiency by disruption of the highly organized leaf canopy. This, in turn, reduces seed set and yield. Lower seeding rates (45 to 60 pounds/acre) have been partially effective in alleviating the lodging problem, resulting in 10 to 20 percent (5 to 10 bushels/acre) increases in yield. The ultimate solution, however, is the development of semidwarf varieties which will resist lodging in highly productive environments and respond in increased seed yield. These results suggest that if the lodging barrier can be removed, the potential exists for a yield breakthrough in soybeans, similar to that which has been achieved in wheat and rice. Current research at the U.S. Regional Soybean Laboratory is directed toward that goal.
19. Hybrid sunflower production made possible by the release of genetic male-sterile and restorer stocks. Enough hybrid sunflower seed was produced in 1972 to plant an estimated 30,000 to 40,000 acres of hybrid sunflowers in 1973. This production was the direct result of the release to the seed industry, in October 1971, of 7 cytoplasmic male-sterile inbred sunflower lines and 2 restorer inbred lines, from the cooperative sunflower research program at College Station, Texas. New hybrids will be high oil varieties, resistant to rust and verticillium wilt, and superior in yield to currently grown open pollinated varieties. Resistance to downy mildew has now been identified and will also be incorporated in future hybrid varieties. In addition to the yield advantage and disease resistance of these hybrids, the uniformity of plant type (all plants are genetically identical) results in a greatly shortened period of anthesis, the growth stage when the sunflower head moth lays her eggs. Thus, the cost of a spray program for head moth control will be greatly reduced. Another major advantage of hybrid sunflowers will be the uniformity of maturity. This will greatly reduce the current harvesting losses and losses due to bird

damage that occur with open pollinated varieties, where there is often considerable range in maturity. With the development of hybrid sunflowers, the door has been opened to a tremendous increase in sunflower production in the Southern United States.

20. South American weevil introduced to control waterhyacinth. The release of eggs of a small weevil, Neochetina eichhorniae, in southern Florida in August 1972, marked the culmination of one phase in the ARS program to control waterhyacinth with its own natural enemies. This weevil was first discovered during a PL-480 funded survey of the natural enemies of waterhyacinth in Uruguay in the mid-1960's. In 1967, an ARS entomologist in Buenos Aires, Argentina, began studies on the host specificity and biology of Neochetina to assure that it would not damage plants of agricultural or other environmental importance once it was introduced to the United States. This is the first of several insects planned for release against this plant. Waterhyacinth covers an estimated 165,000 acres of inland waterways and lakes in the Southeastern United States, primarily in the States of Louisiana and Florida. If colonization of Neochetina is successful, the resultant control of waterhyacinth could aid appreciably in reducing Florida's current expenditure of \$10 to \$15 million for aquatic weed control. All users of the fresh water natural resource would be benefited, private landholders and the general public alike. The clearance of this weevil for introduction to the United States will also provide weed control specialists with another tool to aid in the management of unwanted vegetation with a minimum of environmental disruption. The Neochetina weevil should also prove of value in reducing waterhyacinth in other areas of the world.
21. Potent plant dwarfing chemical isolated from a fungus. A naturally-occurring chemical with plant dwarfing activity has been isolated from the fungus Fusarium moniliforme. State scientists in Georgia had found previously that the fungus was frequently a secondary invader of corn damaged by southern corn blight and that it was the source of a toxin that killed chicks fed blighted corn. A USDA scientist at Dawson, Georgia, isolated the active principle in pure crystalline form from the fungus. The active chemical, termed moniliformin, is composed of carbon, hydrogen, and oxygen and occurs as a water-soluble sodium salt. In tests on actively growing plants at Tifton, Georgia, another USDA-ARS scientist found that a single application of moniliformin resulted in startling reduction in growth of leaves and stems of tobacco after 21 days and of corn after 14 days but did not kill the plants. Chemical dwarfing agents have a large-scale potential for control of vegetation on highway and utility rights-of-way, in tobacco sucker control, floricultural plants, and agricultural mechanization. In addition, chemicals that are natural products are generally readily broken down in biological systems and are less likely to leave harmful residues than synthetic chemicals. Interest in the chemical has been expressed by several chemical companies since the presentation of the research results in August 1972.
22. New levels of cold tolerance introduced in sugarcane. Introduction of new germplasm from a PL-480 project in India, a new laboratory technique for determining cold resistance, and new techniques in crossing divergent varieties have all contributed to development at the U.S. Sugarcane Field Stations, Canal Point, Florida and Houma, Louisiana, of sugarcane with new levels of cold tolerance. Sugarcane is naturally a tropical crop. Through hybridization of tropical forms with wild-sugarless temperate forms, man has developed commercial varieties of sugarcane that can be grown as far north as 32° latitude. For many years, the sugarcane varieties grown in Florida and Louisiana had very little cold tolerance and significant losses occurred in 6 out of every 10 years. Losses from cold damage were estimated at \$20 million in 1962 and \$8 million in 1966. New levels of cold tolerance in recent years have prevented serious losses. Current commercial varieties can withstand temperatures as low as 26°F for several nights. Coupled with frost tolerance of standing or unharvested sugarcane are new cold tolerance levels of overwintering ratoons. Clones have been identified that have survived a temperature drop to 4°F with below freezing temperatures for 75 hours. Commercial varieties that

ratoon well in the new "cold lands" of the Florida Everglades area are also in use. While even greater cold tolerance levels are desired, these new levels have greatly lessened the frost hazard to the mainland sugarcane industry, and in many years will prevent losses that could exceed \$20 million.

23. Improved forage quality means better animal performance. Coastcross #1, a recently released cultivar of Bermuda grass, developed by an ARS scientist at Tifton, Georgia, is 11 percent more digestible than Custer Bermuda grass, a cultivar widely used in the Southern States. Coastcross #1, with its improved digestibility, has increased animal performance about 30 percent. A forage and pasture cultivar to be of maximum value, must be acceptable to the animal, must not be toxic, and must be digestible within 48 hours after intake. An easily digested forage such as Coastcross #1, has a lower retention time, thus permitting the animal to eat more. The result is better animal performance. As an improved cultivar of forage grass, Coastcross #1 has outstanding potential for use in digestibility studies.
24. Bridge crossing introduces new disease resistance from wild relative into cultivated tobacco. The wild species of tobacco, Nicotiana repanda, is resistant to 11 different disease organisms that attack cultivated tobacco, N. tabacum. However, the wild species has never been successfully crossed with cultivated tobacco. An ARS geneticist at Beltsville, Maryland, transferred marker genes from wild tobacco into cultivated tobacco through a third bridging species, N. sylvestris. This "bridgecross" technique has been used by an ARS plant pathologist at Beltsville in transferring disease resistance from N. repanda into cultivated tobacco. Plants have been obtained which are immune to two species of the root knot nematode, Meloidogyne incognita and M. javanica, and to the frogeye leaf spot disease caused by Cercospora nicotianae. The successful transfer of immunity to frogeye and the two species of root knot nematodes suggests that much of the disease resistance in N. repanda can be used in tobacco. Thus, the potential for reducing the \$100 million annual disease losses in tobacco is increased significantly.
25. New herbicide selectively controls difficult-to-control weeds in soybeans. Common cocklebur, common sunflower, and velvetleaf are serious problems in soybean production in the U.S. Currently available methods for their control are generally unsuccessful. Growers in the Midwest consider these weeds so serious that, whenever possible, they avoid planting soybeans in fields known to be infested. In the Midsouth, heavy infestations of cocklebur may reduce soybean yields 50 to 75 percent. In numerous greenhouse and field studies, ARS scientists, working in cooperation with the Minnesota, Illinois, and Mississippi State Experiment Stations, have selectively controlled these weed species with early postemergence applications of an experimental herbicide, bentazon. Bentazon controls many other broadleaf species including wild mustard, smartweeds, common ragweed, and black nightshade. Soybeans have shown remarkable tolerance to bentazon when treated with rates far in excess of those needed for weed control. Bentazon is not effective on grass weeds, but several satisfactory methods of grass control are already available. If bentazon is registered for use in soybeans, it should provide a solution to some weed problems that have long plagued soybean growers and in doing so reduce the yield losses caused by weeds.
26. Ultra high frequency (UHF) electromagnetic energy for nematode and weed control in vegetables. Cooperative research of State and ARS scientists in Texas showed that UHF energy offers promise for controlling the growth of plants and also plant parasitic nematodes. UHF treatment of the soil prevented the growth of a number of annual weeds that require herbicidal treatments and hand labor to control in several vegetable crops. High energy levels of UHF controlled ungerminated weed seeds in dry soil - a feat rarely possible with a soil-applied herbicide. The treatments also decreased the populations of the reniform nematode and increased the yield of cantaloupe. This research program on UHF began at Texas A&M University, College Station, Texas. Oceanography International Company purchased the patent rights from Texas A&M University and is now developing a UHF field applicator. In addition, several electronic companies are

making UHF equipment and eventually one or more companies manufacturing the applicator chassis may become involved if the technique proves to be practical and economical. Potentially, benefits would accrue to the manufacturing companies and to farmers from improved integrated pest control and decreases in pesticide residues.

27. Increase in overall growth and fruitfulness of crop plants with hormones from rape pollen. Efforts to use hormones from crop plants to improve crop production have led to the discovery that brassins, new hormones easily obtained from rape pollen, accelerate overall growth of some kinds of vegetables and trees. Previously known hormones and growth-regulating substances do not bring about an acceleration of overall plant growth in the way brassins do. The overall growth increase obtained with brassins in greenhouse experiments apparently results from an acceleration of meristem activity (growth of the stem tip where new parts of the plant originate) when these naturally occurring substances are applied to the plant in extremely small amounts. Acceleration in growth was evidenced in greenhouse experiments with bean plants as an increase in the size of the leaves, earliness of fruiting, number of fruit produced, and an increase in the average size of the seeds. The magnitude of increase in growth and yield was roughly that which results when crop plants with hybrid vigor are grown. The accelerating effect of these new hormones was greatest in the case of the slow-growing members of a plant population while the rapidly growing ones were less affected.
28. New hop variety released with quality characteristics of imported hops. A new hop variety, named Cascade, was released from the hops research program at Corvallis, Oregon. Cascade is the first hop variety developed in the United States with aroma and brewing characteristics similar to those of varieties now being imported from Europe. This variety is superior in yield to currently grown varieties, is medium in maturity (early September) and retains brewing quality and bright appearance for about 3 weeks after maturity. It has good resistance to systemic downy mildew crown infection and downy mildew cone infection. Cascade is adapted to the hop-growing areas of Idaho, Oregon, and Washington, and is considered a yield and quality breakthrough for domestically grown hops.
29. Hydration pretreatment of cottonseed prevents chilling injury. Recent research at Beltsville, Maryland, disclosed that partially hydrated cottonseeds (12 to 14 percent moisture) are immune to chilling injury. Chilling injury at soil temperatures below 60°F during germination and emergence is a major cause of stand failure, or of variable plant stands that complicate weed control and mechanical harvest. Chilling periods of 16 to 24 hours usually kill the imbibing seed, while a few hours of cold cause injury to the primary root. Surviving seedlings develop into shallow-rooted plants susceptible to water and nutrient stress, and are therefore unproductive. Genetic research on resistance to seed-hydration chilling injury disclosed that Acala varieties are much more susceptible to injury at a comparable level of seed moisture than those varieties that originated in the Mississippi Delta. Inheritance studies disclosed that chilling resistance is controlled by cytoplasmic factors rather than by the nucleus (genetic). Field testing of prehydrated, chilled seed plantings indicates that such seed treatments result in more rapid germination, more vigorous seedlings, and a greater percentage of productive plants in the total stand. Yield increases of 9, 13, and 16 percent were recorded in three field experiments.

Entomology Research

30. European insect enemies of thistles established in the United States. Cooperative research between ARS entomologists in Italy and California and entomologists of the University of California and Virginia Polytechnic Institute has resulted in the successful establishment of a European weevil (Rhinocyllus

conicus) that feeds on the flower heads of musk thistle (Carduus nutans), milk thistle (Silybum marianum), and several other thistle species. The weevil was first released in California and Virginia in 1969, following intensive testing in Italy and California to insure that it would not attack economically important plants. By 1972, the weevil was well-established on musk thistle in several western Virginia counties, where collections are being made for further distribution, and was established in at least one locality in California on milk thistle. The weevil has also been released in Montana, Nebraska, and in several localities in Canada.

31. Release of insect resistant varieties of alfalfa and wheat. El-Unico, a non-winter-dormant variety of alfalfa developed cooperatively by entomologists in ARS and the Arizona Agricultural Experiment Station has been registered by the Crop Science Society of America. El-Unico has excellent resistance to the new spotted alfalfa aphid biotype which was discovered in Arizona in 1969. It also has good resistance to four other biotypes known to occur in Arizona. This variety is well adapted and makes good forage yields in the central valley of California, the lower desert valley areas of Southwestern United States, and other areas that have mild winter temperatures and where winter forage production is desired.

In cooperation with Purdue Agricultural Experiment Station, ARS has released a Hessian fly resistant wheat, Arthur 71. This is the first release of a wheat with the H Riberio gene, which is resistant to all identified Hessian fly races.

32. Parasites reduce cereal leaf beetle populations. In a cooperative project with Michigan State Experiment Station two larval parasites, Tetrastichus julis and Diaparis carinifer, have been established at Gull Lake Experimental Farm in Michigan. Management practices have been devised that have increased an original release of about 2,000/acre in 1967, to more than a million per acre over 20 acres in 1971. Thousands of parasites have been moved from this "Parasite Nursery" to about 140 other counties in Michigan, Ohio, and Pennsylvania where they are effectively reducing cereal leaf beetle populations.
33. Suppression of the tobacco hornworm by the sterile male technique demonstrated. Research conducted in 1971-72 on the Island of St. Croix showed that when the tobacco hornworm was reared on an artificial diet, the males irradiated in the pupal stage, and the adults released to compete with native males for females, the natural hornworm population was reduced to extremely low levels. This successful program has initiated additional programs to demonstrate the suppression or eradication of the tobacco budworm and the corn earworm on St. Croix using the sterile male technique.
34. New method devised to detect Comstock mealybug. A new tool has been added to detect infestations of the Comstock mealybug, a potentially destructive pest of citrus and other economically important crops. The new technique developed by ARS scientists at Riverside, California, consists of a sex pheromone trap containing live, virgin females on a suitable host fruit in a pint ice cream carton. Responsive males are caught on a sticky card placed on top of the ice cream carton. This tool should reduce the need for visual inspection and increase the accuracy of detection of the mealybug.
35. Insect parasites promising for control of pink bollworms. During the summer of 1971 at Tucson, Arizona, more than 2 million Bracon kirkpatricki and 280 thousand Chelonus blackburni parasites were artificially reared and released periodically on 113 acres of cotton to control the pink bollworm. The control obtained compared favorably with 4 applications of insecticides applied to an adjoining area where parasites were not released. The expertise developed in this field experiment should enhance the chances for success in using this approach for controlling the pink bollworm. In previous research with parasites and predators to control this insect pest, emphasis was placed on introducing and

establishing them in an area and letting nature take its course. Consideration is now being given to mass rearing and releasing parasites as needed to control the pink bollworm.

36. Potent juvenile hormone mimic for insect control. In laboratory studies at Beltsville, Maryland, involving the yellow mealworm, Tenebrio molitor, several chemicals of a series exhibited unusually high juvenile hormone activity. Chemicals of this type prevent maturity in insects and hold potential for insect control because of the resultant loss of reproductive ability. One chemical, which is potentially inexpensive, was at least 1,000 times more potent in this test than a compound currently being evaluated in the field; it is the most active compound found thus far in the bioassay. Juvenile hormone-active compounds may provide an alternative to the use of toxicants for insect control.
37. Host-seeking stimulant for insect parasites identified. In experiments at the Southern Grain Insects Research Laboratory, Tifton, Georgia, a host-seeking stimulant for the parasite Microplitis croceipes was demonstrated in the frass (excrement) of its host, the corn earworm. Identified as 13-methyl-hentricontane, this material is the first host-seeking stimulant for parasitic insects that has been isolated, identified, and synthesized. This material may be useful to increase populations of the parasite on crops where the pest species occurs.
38. Potential commercial cell culture of insect virus control agents. Studies at Beltsville, Maryland, on the nutrition of insect cells in vitro have been concentrated on the effect of various lipids on cell growth. The results of these studies, both on the utilization of individual fatty acids and on the effect of supplementing the culture medium with various additional sources of fatty acids, linoleic and linolenic, have showed that these supplements consistently improved the yield of cells per milliliter of medium used. This improved cell growth increases virus production and reduces the cost of medium. Successes have been obtained in replicating certain polyhedrosis viruses in cell lines for the cabbage looper, cotton bollworm, fall armyworm, and alfalfa looper. Cell cultures hold potential for the production of insect viruses for use in insect control through mass infection of native populations of insects.
39. Method of residue analysis developed for synthetic pyrethroid insecticides. New synthetic pyrethroid insecticides have shown great promise as substitutes for DDT. Before such compounds can be used on food crops, an adequate method of residue analysis is required. This need has now been met with a simple procedure developed at Beltsville, Maryland using liquid chromatography and ultra-violet detection. The usual gas chromatographic techniques with selective detection could not be used effectively for residue analysis because these compounds contain only carbon, hydrogen, and oxygen. The new procedure takes advantage of the fact that residues of these compounds are highly soluble in hexane, in contrast to most plant constituents, and are well separated from plant constituents by liquid chromatography. The development of an analytical method for residues will now permit extensive research on the use of synthetic pyrethroids on food crops to replace the persistent chlorinated hydrocarbons and highly toxic organophosphorus insecticides.
40. Tobacco stalk cutting reduces hornworm and budworm infestation. When tobacco stalks are allowed to stand after harvest they may develop secondary shoots or suckers. This secondary growth is particularly attractive to tobacco hornworms and budworms for oviposition and as a source of late season larval food. High populations late in the season result in large numbers of overwintering insects that attack the crop early in the following growing season. Removal of tobacco stalks soon after harvest in a 113 square mile experimental tobacco-growing area near Florence, South Carolina, resulted in approximately 50 percent reduction in plant damage in each of 3 years of the experiment.

41. New pesticides and formulations for aircraft disinsectization. Improved insecticides and methods of their application in the disinsectization of aircraft, ships, and vans have been developed. Large-scale pilot field trials in cooperation with scientists from USDA, DOD, and USPHS uncovered three promising synthetic pyrethroid insecticides that meet the stringent requirements for use in aircraft disinsectization. A formulation of aerosols with these materials in two propellants without the use of DDT or kerosene is gaining acceptance by the military and the World Health Organization (WHO). Two percent resmethrin and 2 percent d-trans-resmethrin have been thoroughly tested in two series of around-the-world aircraft disinsectization trials in cooperation with WHO and DOD and are effective against several insect pests.

Soil and Water Conservation Research

42. Laboratory method developed to evaluate the nitrogen mineralization potential of soils. Research at Beltsville, Maryland, has led to the development of a method for estimating the amount of soil nitrogen that will be mineralized during the cropping season. This resulted from studies that showed that the nitrogen mineralization potentials of soils could be described by a mathematical expression. This information provides a basis for estimating amounts of nitrogen mineralized during specified periods of time in the field, given the appropriate nitrogen mineralization potentials and temperature regimes. The validity of this approach has been ascertained in a greenhouse test with 39 soils in which the temperature was continuously recorded. This basic information fulfills one of the main requirements necessary for predicting optimum fertilizer nitrogen use consistent with the goal of minimizing the possibility of environmental pollution.
43. Intermittent flooding is best for leaching saline soils. Laboratory and field tests at Brawley, California, have demonstrated that salt can be best leached from a silty clay soil in the Imperial Valley by intermittent flooding. This method is more efficient than either continuous ponding or sprinkling. All 3 methods of leaching reduced the salt content of the soil to 40 percent of the original amount in 65 days. This was accomplished with 1.6 feet of water under the intermittent flooding as compared with 3.0 feet for continuous ponding and 2.6 feet for sprinkling. The intermittent method also removed salt faster in the beginning. The intermittent flooding method of leaching allows the use of much smaller dikes and minimizes releaving after leaching. The study demonstrates the possibility of reducing land preparation and water costs for leaching salts in the Imperial Valley.
44. Brush control herbicides do not contaminate ground or surface water supplies. Concentrations of 2,4,5-T and picloram in the soil have remained relatively low after a total of 3.4 pounds/acre of each herbicide were applied to a grassland watershed at Riesel, Texas. Concentrations in the soil were generally less than 50 parts per billion and never exceeded 154 parts per billion. Grass samples contained 2,4,5-T and picloram concentrations as high as 50,000 parts per billion soon after application, but concentrations dissipated rapidly by photodegradation. Groundwater samples taken during 5 months of continuous subsurface flow originating from the treated area showed only minute concentrations of 2,4,5-T and no picloram. Herbicidal levels of surface runoff water samples collected during nine runoff events were usually below 5 parts per billion. These results suggest that danger of contamination of ground or surface water supplies is minimal from application of these two herbicides at recommended rates for brush control in the Southwest.
45. Terraces with tile outlets control sediment and conserve water. Many areas that suffer moisture deficits during the growing season have excess water at other times during the year. Research in Iowa has demonstrated that parallel grass back-slope terraces with tile outlets can be used to collect and store excess water. In 1971, 96, 99, 96, and 86 percent of the precipitation was retained on the land by terrace systems installed at four locations. Soil losses were

reduced 95 percent on three of the four locations and 98 percent on the fourth. Average sediment concentrations in water lost from the tile outlet terraces ranged from 800 to 3,900 parts per million. Terraces are becoming more acceptable as a workable soil and water management system to store excess water in surface reservoirs for irrigation use in times of water deficiency and to serve as a method of controlling sediment losses on the sloping lands of upland soil regions in Iowa and other Midwestern States.

46. Constant water tables boost yields and longevity of sugarcane. Water tables in the sugarcane area of Louisiana normally fluctuate from ground level in the late winter to five or more feet below ground surface in late summer. The effect of this fluctuation on yield and longevity of sugarcane was investigated in experiments begun in 1967 at Baton Rouge, Louisiana. The water table was controlled at all times at 4 levels ranging from 24 to 48 inches below ground surface. For the period 1967-70, the depth to water table had little effect on yield. Cane yields in 1971 were significantly higher in the 40- and 48-inch water tables, 30.7 and 33.7 tons/acre, respectively, than from the 24- and 32-inch water tables, 23.4 and 25.7 tons/acre, respectively. These yields are compared with an average 1971 yield of 21.5 tons/acre for the State. These results show that both yields and longevity are increased by water-table control. This finding should result in returns of millions of dollars annually to the Louisiana cane growers. (Each ton increase in average yield on the 300,000 acres of cane in Louisiana is worth \$2.7 million in gross returns.) An additional benefit to the farmer will be that he will have to replant only every 4 or 5 years instead of the 2 or 3 years that is now required.
47. Mathematical model developed to predict winter wheat performance. Dryland grain production in the Northwest is practiced under a variety of climatic, soil, and cultural conditions. Improved production, along with improved soil and water conservation, depends on integrated use of fertilizer, tillage, and crop alternatives that are consistent with climatic and soil-water factors. A mathematical model has been developed at the Columbia Plateau Conservation Research Center, Pendleton, Oregon, to predict winter-wheat grain yield and daily dry matter accumulation. Model input utilizes different nutrient levels, daily weather conditions, and available water. For an "average" climatic year at the Center, the model projects dry matter yields of 3 tons/acre with 2 inches available water and 40 pounds nitrogen/acre increasing to 11 tons/acre with 8 inches available water and 160 pounds nitrogen/acre. Commensurate grain yields were projected. The model promises to be a valuable management tool for obtaining maximum efficiency from fertilizer and water for grain production under varying climatic conditions.
48. Bovine fat necrosis linked to high nitrogen fertilization of tall fescue pastures. Research at Watkinsville, Georgia, showed that after three years of continuously grazing tall fescue fertilized with 10 tons of broiler litter per acre, 14 of 21 cows developed fat necrosis (dead lumps of fat). After grazing tall fescue fertilized with 200 pounds/acre nitrogen for nearly two years, 9 of 24 cows also developed fat necrosis. The occurrence of necrosis in a significant number of cows in both pasture ecosystems suggests that fat necrosis appears related to plant nutrient (particularly nitrogen) effects on tall fescue composition and the subsequent effect of consumed tall fescue on animal metabolism (particularly fat metabolism). This effect appears cumulative since both the numbers of cows with lesions and numbers of lesions per cow have increased with time. The finding of fat necrosis in cattle grazing fescue fertilized with inorganic sources of nitrogen at a rate considered economically practical and feasible suggests that reevaluation of nitrogen fertilization practices is necessary for pasture ecosystems. The potential importance of this finding is illustrated by the realization that there are 17 to 20 million acres of fescue in the Southeast, and that there is a trend toward an increasing use of nitrogen fertilizers on grasslands to increase their productivity.

49. Plant residues immobilize nitrogen and prevent leaching. Research in Iowa has shown that organic residues returned to the soil in a corn monoculture can immobilize nitrogen and keep it from leaching. Annual addition of 8 tons of residues per acre to a Marshall silty clay loam tied-up about 38 pounds of nitrogen/acre/year, whereas 25 pounds of nitrogen/acre/year was lost from the soil where no residues were added. Three tons per acre of plant residues added to the soil each year were necessary to prevent loss of total nitrogen and organic matter from the soil. Soil physical conditions were improved only slightly or not at all by the residue treatment over a 13-year period. The results of this research provide a basis for preventing leaching losses of residual fertilizer nitrogen and for maintaining adequate levels of soil organic matter.
50. Season of the year affects heavy metal uptake by plants grown on sewage sludge or garbage mulch. A high acid soil strip mined area near Morgantown, West Virginia, was successfully revegetated with tall fescue grass using 5 and 10 ton rates per acre of sewage sludge in combination with two rates of raw rock phosphate, with and without garbage mulch. Tall fescue harvested in March showed a very high lead (23 to 47 parts per million) and zinc (40 to 88 parts per million) content especially where sewage sludge was applied. Lead content of the plants sampled in June had dropped to 4 to 8 parts per million for most treatments, with plants from sewage treatments averaging 6 to 8 parts per million. The zinc content averaged about the same as for plants sampled in March. The copper and cadmium content of fescue appeared to be normal. The season of the year has a significant effect on the amount of lead accumulated by tall fescue. The possibility of high lead content must be considered when grazing forages grown on soils which have been used for recycling domestic or industrial wastes.
51. Alternating strips of grain sorghum and winter wheat leads to more efficient use of limited irrigation water. Growing irrigated grain sorghum in alternating strips with winter wheat and reducing the number of irrigated furrows is a promising practice in the water-deficient Southern High Plains. Work at Bushland, Texas, shows that the practice greatly reduces seasonal irrigation water requirements in a graded furrow system. Irrigating only two furrows in a six row strip reduced water intake during three seasonal irrigations by about one-half. Yields were only slightly lower. The outside crop rows received very little irrigation water, but obtained water from adjacent strips during the wheat nongrowing period. During the wheat growing season, the outside rows of wheat benefit from obtaining water from the strips where sorghum grew. The amount of water available from the adjacent strips varies depending on climatic conditions and irrigation practices. The two-furrow irrigation practice appears very promising as a means of utilizing rain falling on strips during the non-growing season of one crop as supplemental water for a partially irrigated seasonal crop. This results in increased water use efficiencies for both rainfall and irrigation.
52. Storm hydrograph model based on the dynamic watershed or partial-contributing area concept of storm runoff has been developed. Surface runoff is not uniform from the entire surface of a watershed. The bulk of surface runoff comes from relatively small contributing areas. At University Park, Pennsylvania, ARS scientists have developed a mathematical storm hydrograph model based on the partial contributing area concept. The runoff response is calculated from readily obtainable data including rainfall, initial boundary conditions, and indexes of watershed geometry. This model provides a method for identifying the actual and potential water producing areas in a watershed. This type of information is essential in developing watershed management treatments for runoff regulation, erosion control, and zoning decisions for building and septic or waste disposal systems.

53. Mineral weathering is a major factor affecting the solute concentration in drainage water. Research has been carried out at Riverside, California, to assess the composition of drainage waters from soils irrigated with waters simulating 8 important river waters of the Western United States. The data obtained represent the best currently available estimates of the salt burden of drainage waters that may result from irrigation. Mineral weathering has a major effect on the solute composition and content of percolated drainage waters from soils irrigated with relatively salt-free waters such as that from the Feather, Columbia, Snake, Sacramento, and Yakima Rivers. Mineral weathering sets a lower limit on the solute concentration of these drainage waters at about 10-20 milliequivalents/liter. Solute precipitation and concentration of salts by evapotranspiration have a major effect on the solute composition of drainage water from soils irrigated with relatively saline waters such as the lower Colorado, Missouri, Rio Grande, Arkansas, and Pecos Rivers. The extent of salt precipitation is greatly affected by leaching conditions, but for most drainage waters the upper limits for total salt concentration ranges between 55 and 125 milliequivalents/liter. While man may be able to modify the pollution potential of irrigation drainage waters to some extent, natural weathering places a lower limit on the salt content and composition of such waters.
54. Nutrient loss can be high even on no-till plots. No-till reduces soil erosion and improves nutrient and water-use efficiency. Studies at Coshocton, Ohio, have shown that no-till will not guarantee that nutrients will not be lost under adverse weather conditions. Rainfall had been very low and the surface soil on one plot was hard and dry. Less than a week after applying 300 pounds nitrogen and 42 pounds phosphorus/acre as a surface application to no-till corn plots, over 3 inches of rain fell within a few hours. The surface runoff removed only 230 pounds of soil per acre, but it removed 33 pounds of the applied nitrogen and 2.1 pounds of the applied phosphorus. A second no-till watershed, of even greater slope than the first, but located on a lighter-textured soil with greater inherent infiltration capacity allowed no runoff or erosion and, hence, no nutrient transport and loss. Maintenance of conditions that enhance infiltration of water greatly reduce the risk of nutrient movement through dissolution and runoff.
55. Irrigated project exerts strong "oasis" effect on lower atmosphere. An irrigated area acts as an oasis in the desert with a strong advection of sensible heat from surrounding dry, arid lands to irrigated crops. Evapotranspiration is increased and there is a corresponding cooling of the air. This advection of sensible heat was studied at the Snake River Conservation Research Center, Kimberly, Idaho. Evapotranspiration was measured with a sensitive weighing lysimeter located in a 7-acre field of alfalfa. Other energy-balance items were also measured and air temperature and humidity were obtained at heights up to 50 feet above the surface. The average upward sensible heat flux from the irrigated project during midday was less than a third of that from the desert. Results indicate that a low-level inversion and advection of warm air to irrigated fields can occur during the day even while there is a net upward heat flux. The total effect depends on the relative amount of fallow or barren fields, roads, and paved and built-up areas scattered throughout the irrigated region.

Agricultural Engineering Research

56. Design of a system for pallet handling and field storage of seed cotton. A system for pallet handling and field storage of seed cotton was investigated by engineers at Lubbock, Texas, in cooperation with Texas Experiment Station engineers and engineers of Cotton Incorporated. In anticipation of a much faster harvesting rate due to higher capacity harvesters it has been more economical to store the seed cotton in the field rather than tying up expensive conveying equipment for dead storage at cotton gins. The equipment consists of a mechanical packer that forms the seed cotton into ricks on pallets in the field. Ricks may be covered against weather conditions. Pallets are loaded onto special conveyances and hauled to the gin as needed. The system promises

to reduce labor for harvesting, reduce the cost of equipment used in transporting seed cotton to the gin, and afford an increase in gin utilization time.

57. Development of bulk handling system for mechanically harvested concord grapes. A bulk handling system for handling mechanically harvested grapes was synthesized, and equipment designed, constructed and evaluated during 1970 by ARS engineers in cooperation with engineers of Michigan State University. The system worked so well it was used commercially in handling 1,000 tons of grapes. The grapes move directly from the harvester onto a tote-lift holding 3 to 3-1/2 tons of grapes. When filled it is moved to the edge of the vineyard where by pulling a valve, it is raised and dumped into a bulk road truck holding 6 to 8 tons. At the plant, the road truck is unloaded similarly by pulling a hydraulic valve. The system saves approximately \$3,000 per harvester, reduces labor requirements by 2 men in the field for each harvester and by 10 men at the plant. Quality of juice made from bulk handling grapes is as good or better than grapes handled in the conventional way. About 25 tote-lifts have already been sold and there is every indication that thousands of tons of grapes will be handled by the new method in 1972.
58. Development of peanut digger and salvager. A salvager for peanuts that become detached from the vines prior to or during the digging operation and which constitute a sizable loss during most crop years has been developed and tested by ARS engineers at Holland, Virginia. The experimental machine operates in conjunction with the peanut digger that lifts the peanut plants with the soil. The soil is sifted over an agitating screen that separates the soil from the peanuts which are conveyed and sacked as the machine moves through the field. In the present configuration this experimental machine moves slower than the conventional digger. Considering that more than 10 percent of the peanuts are lost with a conventional digger even during a good picking operation and up to 50 percent of the entire crop is lost during a poor season, the increased time taken for digging is well spent. Use of the experimental digger and salvager, however, has resulted in a 90 percent reduction of such losses.
59. Runoff of unpaved beef feedlots. ARS agricultural engineers working in cooperation with State engineers and animal scientists at the University of Nebraska have determined the first measured data on runoff from unsurfaced beef cattle feedlots. Annual runoff including snow melt was approximately 40 percent of the total annual precipitation. Increased density on the feedlot resulted in a higher runoff than lots stocked to lower rates. Feedlot slopes within the ranges studied--3 percent to 9 percent--did not appear to affect quantity of runoff from snow melts. An estimated 6 percent of the volatile solids deposited on the feedlot surface was transported in runoff from lots with stocking rates of 200 square feet per head and 3 percent for stocking rates of 100 square feet per head. Average total nitrogen in rainfall runoff was 108 pounds per acre inch of runoff. Estimated phosphorus yield averaged 13 pounds per acre inch of rainfall runoff.
60. Improved dairy cow environment. At the Missouri Climatic Laboratory, weather data and laboratory studies were used to determine the climatic zones where air conditioning dairy barns by evaporative cooling would be profitable. These results have encouraged many dairymen to consider this method of improving the dairy cow's environment. Dairymen are readily adopting this practice in areas where it has been identified as profitable. Specific advantages of evaporative cooling over other methods of environmental modification include low initial operating costs, simplicity of installation and management, ease of automation, and adaptability to open or enclosed shelters.
61. Mechanical harvesting and handling of cucumbers. A comprehensive study of mechanically harvesting and handling cucumbers made by ARS and Michigan State University engineers showed that only 49 percent of the usable cucumbers in the field were delivered to the pickle plant in 1969. In 1970, industry, utilizing research findings, improved delivery to the plant to 65 percent and in 1971

to 72 percent. Over 32,000 individual cucumbers in 1969 and 98,000 cucumbers in 1970 were evaluated as to damage and where the damage occurred. Recommendations were then developed for improved handling systems, both in the field and in the processing plants, that would result in less bruising of the cucumbers. This research has not only led to an increase in recovery from 49 percent to over 70 percent, from 1969 to 1971, but has reduced damage by 70 percent and may reduce bloating by even a higher percent. It is estimated that the research will result in a saving to the Michigan industry alone of over \$3 million a year.

UTILIZATION RESEARCH AND DEVELOPMENT

Current activities: Basic, applied and developmental research in the field of chemistry and related physical and biological sciences is concerned with basic knowledge of chemical composition and physical properties of farm commodities and with the application of the knowledge to the development of new or improved products and processing technology that will enhance utilization of these commodities for food, feed, drugs, fabrics, industrial chemicals and other products use. Current utilization research and development investigations are aimed at expansion of agricultural markets and reduction of processing and distribution costs. Efforts are being directed to: devising new, easy-to-prepare food products that are attractive, economical, and fit the distribution requirements in world-wide market channels; improving functional properties of natural fibers such as cotton, wool and mohair--to better meet consumers' needs; developing more economic and more suitable processed feed products needed in the expansion of the poultry, dairy, and livestock industries and seeking broadened and profitable industrial uses for agricultural materials. Continued emphasis is being given to such problems as health-related research on tobacco and prevention of harmful bacteria and molds in agricultural products. Increased effort is being given to the processing of agricultural commodities to minimize waste formation and to utilize waste products to avoid pollution.

In recent years, this research has been responsible for opening new markets for cotton by adding permanent press and fire retardant properties, greatly increasing the demand for soybeans by making this commodity a major source of vegetable oil for food and industrial uses through improved processing technology, developing new cereal food products, new processed forms of fruits and vegetables, new tannages for leathers, new stabilizers for concentrated milks, the use of linseed oil to protect concrete, and new starch derivatives for industrial uses.

Selected Examples of Recent Progress:

Index of selected examples of recent progress. A description of these examples follows this index.

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1. New flame-retardant finish for children's sleepwear is commercialized. The THPOH-ammonia finish, an effective and durable flame-retardant finish for cotton, was recently commercialized. This new finish, developed by ARS scientists at the Southern Regional Research Laboratory, can be applied to fabric of any weight without imparting color or changing the softness and strength of the fabric. It is particularly suited to children's sleepwear fabrics woven of cotton or high levels of cotton blended with synthetic fibers. Sleepwear properly fabricated from such treated fabrics can meet the Department of Commerce's Flammability Standards for Children's Sleepwear (DOC-FF-3-71). All children's sleepwear through size 6X offered for sale must be made flame retardant by July 29, 1973, to meet the standards. ARS, Cotton Incorporated, and a major textile company cooperated in a joint effort to scale up the process for applying the finish and thus to speed its commercialization. Other textile mills are evaluating the process on an advanced scale with the assistance of Department scientists. The new process will help reduce the toll of a quarter million Americans injured and thousands killed each year as a result of burning fabrics.
2. Nutritional quality of cereal products is improved with added soy meal products. Nutritional properties of cereals and cereal products are improved by the addition of defatted soy products. Studies by ARS scientists at the Northern Regional Research Laboratory have shown that up to 15 percent of soy flour or grits can be added to cereal products such as corn meal, corn tortilla flour, rolled oats, rolled wheat, and bulgur without greatly altering their physical or organoleptic (qualities perceived by the senses of taste, smell, sight, and touch) properties. Cereal-soy blends contain at least 30 percent more protein than their cereal components. The additional lysine contributed by the soy products dramatically increases the protein efficiency ratios (PER) of the blends. USDA is currently purchasing soy-fortified corn meal, rolled oats, and bulgur for the foreign donation program. Soy-fortified cereal products also have excellent potential for upgrading protein quantity and quality of a variety of low cost familiar foods for domestic food programs.
3. Recycling food processing brines. Salt from food processing brines can be recycled by the new submerged-incineration reclamation system invented by ARS scientists at the Western Regional Research Laboratory. The ARS inventors will use recycled salt recovered from a commercial operation to store a commercial batch of cucumbers in order to test its effect on final product quality. This reclamation system may save pickle and olive processors now threatened because of the extremely difficult task of disposing of salt-containing liquid wastes.
4. Efficient new feed ingredient recovered from alfalfa. A new process, invented by ARS scientists and engineers at the Western Regional Research Laboratory, to recover more value from chopped green alfalfa and produce a new concentrated feed to improve efficiency of meat production has reached large commercial scale operations. About 4,000 tons of the concentrate, PRO-XAN, was produced each year in 1970 and 1971 from juice squeezed from 300,000 tons of green chopped alfalfa as a byproduct of the production of 65,000 tons of dehydrated hay. In contrast to the hay, PRO-XAN is a fiber-free product high in protein, vitamins, and pigments. Application of the new process has spelled the difference between profit and loss to the producers during 1972, a year in which the prolonged dock strike led to greatly reduced exports to Japan and intense competition for domestic markets. The new process will continue to expand in this country and international interest has been created in the process as a new product for poultry feed and as a means for more efficient recovery of leaf protein, including its use for human food in developing countries.
5. New methods for detecting aflatoxins lead to safer foods and feeds. Rapid, sensitive, inexpensive methods for detecting aflatoxins in affected commodities and in their products are a prime requisite for safeguarding our food and feed supplies. ARS scientists at the Southern and Northern Regional Research Laboratories recently developed novel analytical methods that are being widely used in several major industries and in research. Particularly useful is the mill-column method, named for the small glass column employed for separating the aflatoxins. For cottonseed, aflatoxin contamination can be reliably detected in as

little as 15 minutes, whereas quantitative methods take 3 to 4 hours and are more costly. The new method has thus enabled the cottonseed industry to increase its screening of incoming lots to segregate contaminated seed. The economic savings, both in the cost of analyses and in assuring the production of meals suitable for animal feeds, are sizeable. By using this method to screen incoming cottonseed, at least one company has been able to produce meals with a price advantage of \$20 to \$50 per ton.

For commodities that contain interfering plant pigments, a slight modification was developed. It provides a general purpose method for detecting the presence of aflatoxins in various oilseeds, tree nuts, and grains in about 20 minutes. The tree nut and corn milling industries are already using the method to screen many lots of incoming raw materials. Ultimate economic savings can be expected to be tremendous, particularly in the corn industry.

6. Workshop on aflatoxin analyses for corn. ARS scientists at the Northern Regional Research Laboratory have successfully adapted a "fluorescent" test and a mill-column test to identify corn containing aflatoxin as rapidly as possible. The "fluorescent" test, based on the bright greenish, yellow fluorescence associated with the presence of aflatoxin and toxin-producing mold, locates corn that may contain aflatoxin. The rapid screening procedure using millicolumns determines whether aflatoxin is present at levels of more than 10 parts per billion, and usually enables the analyst to make a preliminary estimate of levels of toxin in a sample. It proved satisfactory in interlaboratory collaborative studies. At the request of the American Corn Millers Federation, these methods along with a quantitative method were demonstrated in 2 workshops to persons from industry, universities, and other Department agencies. A 3-day session was held on the "fluorescent" test and rapid screening procedure for people from the Grain Division, Agricultural Marketing Service, and the Agricultural Stabilization and Conservation Service.
7. Cottonseed flour from liquid cyclone process approved for food use by Food and Drug Administration. The FDA's allowance for use of cottonseed flour as a food additive now opens the way for its increased commercial production. Previously its use had been limited because conventional glanded cottonseed contains gossypol, a pigment that may cause physiological effects. ARS scientists at the Southern Regional Research Laboratory invented the Liquid Cyclone Process (LCP) to remove the pigment glands and simultaneously concentrate most of the protein into a fine, light, bland flour that contains about 70 percent protein. It can be used to make isolates containing 90 percent protein. Both of these high-protein products have excellent potential in bakery and meat items, textured analogs, and beverages.

A new LCP plant now being constructed in Texas will become operational in the Spring of 1973. It is designed so that it can be expanded rapidly. Another industrial firm is implementing a broad program to develop and market protein products from LCP flour and will market the total production from the new LCP plant.

In addition to increasing the value of the domestic cottonseed crop, the LCP may also help alleviate the worldwide shortage of protein. Glanded cottonseed is grown in many countries; the total annual production is 20 to 22 million metric tons. By providing degossypolized cottonseed flour, the LCP offers an economical method of converting this huge production into nutritious foods. But the test of any food is whether a specific population will eat it. Fortunately, the blandness and versatility of LCP flour permits its incorporation into a wide variety of foods and are major advantages in appealing to diverse tastes throughout the world.

8. Recycle washing of soybean oil reduces water pollution and saves oil. ARS scientists at the Northern Regional Research Laboratory have developed a water-recycle process that utilizes the same water over and over for washing alkali-refined soybean oil. The water is treated with a cation exchange resin between

cycles. A 28-day test under contract in a commercial refining plant showed that the recycle method reduced the biological oxygen demand (BOD) discharge from 750 to 47 pounds per day (94 percent reduction) on a 6-tank car per day (oil) basis. In conventional commercial practice, the water used to wash alkali-refined vegetable oils is discharged to a treatment plant for removal of polluting substances. This treatment involves a substantial cost to the refiner. The cost of recycle washing for an automated system was estimated from plant data to be less than 0.5 cents per hundred pounds of oil. Since recycle washing eliminates the 0.5 percent loss of oil that accompanies conventional washing, oil recovery is equivalent to a savings of about 5 cents per hundred pounds oil or 10 times the cost of recycle washing. Thus, the recycle washing process can effect both substantial reduction in BOD discharge and an appreciable savings in the cost of plant operation.

9. New products improve lamb outlook. The Eastern Regional Research Laboratory has developed highly attractive, precooked, frozen convenience items from low demand lamb carcass parts. While there is a high demand for choice lamb cuts, such as chops and leg roasts, a low demand exists for the other portions of lamb carcasses. This markedly decreases dollar yield from lamb production, with serious effects felt particularly in major sheep producing regions. To offset this disadvantage, lamb curry, shanks, loaf, riblets, sausage, and shish-kabobs have been produced from lamb carcass parts. For example, the lamb curry is a fully prepared and cooked meat dish made from cubes of lamb shoulder, seasoning, fruits and vegetables packed in frozen form and packaged in a boilable bag. To use, it is heated and served over rice, noodles, or on toast. Cost figures indicate that commercial production of these products should be attractive. Consumer evaluation, including that of key personnel of two large purveyors of convenience foods, has been highly favorable. At least one firm is producing and marketing several such products. Opportunities for the new products appear excellent as new items among growing frozen meat product lines which already are grossing over \$1 billion annually.
10. Development of first component of a pollution abatement system for poultry processing plants. An automated pneumatic blood collection and handling system has been developed and commercially tested by ARS scientists at the Russell Research Center, Athens, Georgia. This unit substantially reduces labor requirements for cleaning up the slaughter area in poultry processing plants, greatly reduces the amount of blood that enters the plant effluent (thereby reducing the biological oxygen demand loading), and provides a cleaner and more wholesome work area within the plant. It is estimated that its use by the more than 700 processing plants in the United States will save the industry from \$2 to \$3 million annually through labor savings, pollution abatement, and the revenue received from the sale of collected blood. The system is the first component of an overall waste handling system that is being developed and tested to handle all wastes from poultry processing plants. The system is intended to replace the current method of floating waste materials out of the processing areas in a stream of water, with the resulting biological oxygen demand loading of the effluent with soluble and suspended matter, the worst pollutants being blood and grease.
11. New process developed for recovery of wheat gluten. Wheat gluten has unique viscoelastic properties that allow entrapment of leavening gases and the formation of desired baked structures. Wheat flours are not uniform in their baking quality, and isolated gluten is used to bolster and adjust baking quality. ARS scientists at the Western Regional Research Laboratory developed a new process for gluten recovery from wheat which decreases water use, eliminates waste effluent, reduces capital requirements for equipment, shortens time in process, cuts down microbial contaminations, and provides 100 percent recovery of solids as useful products. The process was developed as a possible replacement for conventional gluten washing of second clears flour (a milling by-product). About 240 million pounds of this by-product is washed each year to yield 30 million pounds of gluten and 150 million pounds of starch. In commercial operations some 30 to 40 million pounds of flour solids are lost in waste effluents.

Pilot operations have been successful with the new process at 4 companies in the United States, Canada, and Japan. A large milling company is now surveying possible markets for the new protein concentrate (gluten plus soluble protein), also obtainable from the process.

12. Development of procedures to use discount cottons efficiently in new consumer products. The shortage of medium staple, average micronaire cotton, caused by lower production in recent years, stirred interest in using discount cottons, the 25 percent of the crop normally discounted because the fibers are too short, too coarse, too fine, or spotted. These types of cotton are now being utilized efficiently by industry as a result of ARS research at the Southern Regional Research Laboratory. Techniques were developed for homogeneously blending and processing discount cottons into highly acceptable consumer products, including printcloth, sheeting, twill, heavy denim, bark cloth, and toweling. By expanding the demand for these cottons in the United States, this research has reduced government loan costs, textile manufacturing costs, and consumer costs for a variety of end-products. Farmers have also benefited because the demand for discount cottons has increased their price 1 to 2 cents per pound. Savings in raw cotton costs to mills can range up to \$10 per bale. In addition to domestic use, discount cottons have potential in important export markets. Organizations in the major textile producing countries are enthusiastically evaluating commercial application of the new processing technology. Several of these have already increased their imports of American discount cottons.

NUTRITION AND CONSUMER USE RESEARCH

Current activities: Investigations are conducted on human nutritional requirements, composition, and nutritive value of foods, and on problems relating to consumer and food economics. Findings from these investigations help to determine nutrient requirements and how foods can supply these to best assure nutritional well-being of people throughout their lifespan; to provide up-to-date information about food consumption and nutrition of the population; and to develop improved procedures for household preparation, care, and preservation of foods which will preserve their nutritional, sanitary, and wholesome quality. The findings from these investigations also aid the action programs of the Department in improving nutritive quality of diets of participants in the School Lunch Program, Food Stamp Program and Food Distribution Programs.

Selected Examples of Recent Progress:

Index of selected examples of recent progress. A description of these examples follows this index.

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| 1. Iron availability of wheat is good | 3. Rating foods as sources of the chromium-containing "glucose tolerance factor" |
| 2. Guidelines for feeding the elderly | 4. Cholesterol content of foods |
1. Iron availability of wheat is good. Iron in a readily available form is needed to prevent anemia and other nutritional deficiency problems. ARS nutrition scientists at Beltsville, Maryland, have found a high biological availability for the iron in whole wheat and its milling fractions, and this availability remained when the hard wheat flour was baked into bread. The iron in wheat proved even more available in maintaining blood hemoglobin in a growing animal than the comparison iron salt, ferrous ammonium sulfate. However, some iron compounds used for food fortification, such as ferric phosphate, were not good sources of available iron. It appears that the iron of whole wheat products in the human diet could make a significant contribution to one's nutritional need.
2. Guidelines for feeding the elderly. ARS nutritionists at Hyattsville, Maryland, have developed new guidance materials on "Nutrition Programs for the Elderly-A Guide to Menu Planning, Buying, and the Care of Food for Community Programs."

This publication meets a need for the DHEW Administration on Aging, which has a new national program to provide low cost, nutritionally sound meals to older Americans with low incomes. The meals will be served in strategically located centers in communities, or delivered to the home if persons are homebound. Since many of the individuals working in these community programs are expected to lack professional training in nutrition and food service, there was urgent need for reliable guidance materials for their use. The publication provides a framework for planning meals that are intended to contain at least 1/3 of the Recommended Dietary Allowances for older adults. The Bulletin also provides information on buying and storing foods, protecting them from nutrient loss, and how to keep foods safe to eat. Information on the importance of food to nutritional health is also included.

3. Rating foods as sources of the chromium-containing "glucose tolerance factor". For proper control of blood sugar by the hormone regulator, insulin, a glucose tolerance factor (GTF) found in foods is required. GTF contains the mineral, chromium, which occurs in foods in trace quantities. ARS nutrition scientists at Beltsville, Maryland, have found that the part of the chromium extractable with dilute alcohol was significantly related to GTF activity of some foods. However, the biological activity of a food is not related to its total chromium content. This observation provided a basis for rating foods as sources of this important nutrient. Brewers yeast had the highest rating among 46 different food items that were evaluated. Liver and cheese were rated high. Cereal products rated somewhat less but still proved to be good sources. Whole wheat bread and white bread were somewhat better than beef in terms of "biologically available chromium." None of the alcohol extracts from fruits or vegetables, or from egg yolk, were biologically active for GTF even though most did contain extractable chromium.
4. Cholesterol content of foods. Values on the cholesterol content of a wide variety of foods have been developed and published by ARS nutritionists at Hyattsville, Maryland. The new data on cholesterol and on fat in the foods will be particularly helpful to nutritionists, dietitians, and others concerned with problems in controlling cholesterol and fat in diets of individuals and population groups. The new values are considered representative of the cholesterol content of about 250 food items. This is nearly a 5-fold increase in the number of items listed in the section on cholesterol in the last edition of Agriculture Handbook No. 8, "Composition of Foods."

MARKETING RESEARCH

Current activities: Investigations are directed toward increasing marketing efficiency by reducing product losses and costs, and improving methods of quality identification and measurement. This involves the development of solutions to problems encountered in the handling, storage, grading, and distribution of agricultural products from the farm through retail stores. The research deals with physical operations, equipment and facilities in handling, and biological and related problems associated with the evaluation, measurement, protection, maintenance, and improvement of product quality. In cooperation with public and private agencies and trade groups, it is conducted during each stage of marketing, such as assembly points, storage facilities, transportation, terminals, central markets, and wholesale and retail markets. This research also aids those action programs of the Department involved in grading, inspection, and standardization of agricultural commodities.

Selected Examples of Recent Progress:

Index of selected examples of recent progress. A description of these examples follows this index.

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|--|--|
| 1. Development of marketing facilities for producing areas | 4. Storage life of avocados extended in controlled atmospheres |
| 2. Many sex attractants of stored product moths are being discovered | 5. Warehouses mechanization increases productivity in grocery warehouses |
| 3. Improving transportation and packaging for overseas markets | 6. Carbon dioxide aids honey industry |
-
1. Development of marketing facilities for producing areas. Plans were developed during the year for 18 marketing facilities in 11 states. In addition, an evaluation was made of a new fruit and vegetable marketing program at the request of the Commonwealth of Puerto Rico. Plans for improved facilities were developed in cooperation with state departments of agriculture, extension services, farmer cooperatives and private industry. Examples of studies conducted in Fiscal Year 1972 include: developing layouts and equipment plans for an egg breaking plant for a cooperative operating in North Carolina and South Carolina; developing an improved layout and more efficient equipment utilization in a dairy plant in Kansas; assisting in planning changes in a small turkey processing Plant to meet requirements of the USDA inspection program and planning the layout and equipment needed for a 50 percent increase in volume in a dairy plant in Tennessee; planning the layout and operating methods for a new egg packing plant in Arkansas; assistance in planning a new citrus packing house in Texas; development of plans for relocation of a farmers market in North Carolina; an analysis of requirements for combining a county and a city farmers market in South Carolina; developing the layout, equipment and operating methods for the merging of 2 dairy plants in Indiana; developing plans for new egg processing facilities in Massachusetts and West Virginia; and planning new meat marketing facilities in Pennsylvania and Connecticut. In addition, 3 research publications were prepared to help state department of agriculture and extension service employees and individual firms plan improved facilities.
 2. Many sex attractants of stored product moths are being discovered. Significant strides have been made in ARS research at Gainesville, Florida, and Savannah, Georgia, on sex attractants of several kinds of moths that attack stored products. The sex attractant produced by females of the Angoumois grain moth has been extracted, isolated, purified, and the chemical structure tentatively identified. The purified extract is attractive to male moths at extremely low concentrations. In preliminary tests it was an efficient bait in traps. The attractant of the Indian meal moth has been synthesized in an 11-step series of chemical reactions. The chemical structure has been identified for the only stimulatory attractant isolated from Mediterranean flour moth females. The same compound has been found in the Indian meal moth, almond moth, and tobacco moth. The almond moth has yielded biologically active fractions which are being investigated to define the components of the sex attractant of this species. The stored product moths cause extensive losses in a wide range of products such as grains, soybeans, peanuts, dried fruits, and milled or processed dry cereal products including animal feeds as well as human foods. Availability of the synthesized attractants from these moths could open the way to new methods of prevention or control that would avoid the residues resulting from the use of conventional insecticides.
 3. Improving transportation and packaging for overseas markets. ARS scientists at Orlando, Florida; Fresno, California; Austin and Weslaco, Texas; Belle Mead, New Jersey; Hyattsville, Maryland; and Rotterdam, Netherlands, are helping to expand the export market for American farm products through research to improve transportation and packaging. An European market for watermelon and fresh sweet corn is developing after a series of successful demonstration shipments guided

by ARS researchers in cooperation with the Foreign Agricultural Service. Harvesting, packaging, precooling, loading, transporting, and marketing procedures suitable for export, were developed and tested, and a series of commercial shipments were made to markets in Europe. The products were well received, and the buyers reordered more than suppliers could provide. This season a substantial commercial European market is expected for these products with an estimated 150 truckloads to England alone. ARS research assistance to the Department of Defense on iceberg lettuce shipments to overseas military bases has resulted in reduced losses amounting to about \$750,000 for 1972. The procedures developed will be applied to commercial market shipments in 1972-73. Similar research has been conducted on a wide range of farm products; for example, previous research on 2 products has resulted in an export market of 8 million pounds of fresh radishes and 6 million gallons of single strength citrus juice (1970-71 season).

4. Storage life of avocados extended in controlled atmospheres. ARS scientists at Miami, Florida, found that avocados stored in an atmosphere of 2 percent oxygen, 10 percent carbon dioxide, and 88 percent nitrogen at 45°F for 60 days and then ripened or softened at 70°F were fully acceptable and equivalent in quality to those stored for 20 days in air. Lula avocados, one the the principal Florida varieties, responded somewhat better than the Booth 8 variety indicating a differential response according to variety. The possibility of lengthening the marketing season and of improving the quality of avocados on the market has caused several producers to investigate the possibility of controlled atmosphere storage for avocados. One structure is now under construction in south Florida.
5. Warehouses mechanization increases productivity in grocery warehouses. ARS marketing researchers at Hyattsville, Maryland, have evaluated advanced mechanized grocery warehouse operations and have found that all of the mechanized systems provided increased overall productivity in warehouse handling when compared with conventional systems. According to the preliminary report, overall receiving productivity was increased by more than 50 percent and overall shipping productivity was increased by more than 100 percent. Seven existing mechanized warehouse operations were observed during the study. The specific capabilities of these systems were measured in terms of cost, productivity, and return on the investment. The mechanized operation that increased receiving productivity more than 50 percent used a computer-controlled storage/retrieval machine to move products on captive pallets from the receiving dock and placed them in storage. The mechanized operation that doubled order selection and truck loading productivity used inclined chutes to store products which were released (upon the computer's command) onto a conveyor, sorted, routed to the proper delivery truck, removed from the conveyors, and manually stacked in the delivery truck. In all instances, the increased productivity must be balanced against present and anticipated wage rates and the capital investment for equipment. The final research report will provide guidelines for determining the feasibility of installing mechanized warehouse handling systems for the 1980's.
6. Carbon dioxide aids honey industry. The wax moth attacks the comb of honey during storage prior to extraction for market distribution. It must be controlled to prevent contamination or loss of the honey. ARS scientists at the Stored Product Insects Laboratory, Savannah, Georgia, found that carbon dioxide applied instead of conventional fumigants controls the wax moth and has no adverse effect on the honey. One large honey association will use carbon dioxide exclusively in 1972 to protect comb honey valued at over \$500,000. It is expected that other producers will soon adopt this method of wax moth control. The industry will thus be able to preserve the image of honey as a pure, natural food, free of residues of insecticides or fumigants.

RESEARCH AND DEVELOPMENT ON THE
ERADICATION OF NARCOTIC-PRODUCING PLANTS

Current activities: Research under this activity was started in 1972 as outlined under the Omnibus Drug Control Message of June 17, 1971. The research conducted under this activity is directed toward the development of technology for the selection, development and implementation of programs that would provide suitable alternate crops and farming systems to substitute for areas taken out of narcotics production. Attention is also being given to development of technology for the detection and destruction of illicit growth of narcotic-producing plants without adverse ecological effects. The development of this eradication technology is carried out in cooperation with research institutions in foreign countries.

COORDINATION OF DEPARTMENTAL AND INTERDEPARTMENTAL

ACTIVITIES RELATED TO PESTS AND THEIR CONTROL

CURRENT ACTIVITIES: The Department's activities in pest control have the objective of providing the technology needed to control all classes of pests. Of principal importance in that regard is the protection of crops and other commodities against pests that reduce yield or otherwise influence agriculture, health, and environmental amenities. Although agricultural production is of primary concern, other needs for pest control cannot be ignored. Of particular importance are the pest control activities related to quarantine efforts, by which new exotic pests are intercepted and destroyed at ports of entry. Also important are the monitoring activities for pesticide residues in red meat and poultry, which assure a wholesome supply of meat and meat products.

Activities of the Department are closely coordinated with States and with other agricultural groups as needed. This cooperation and coordination occurs at all levels - scientists, extension personnel, and regulatory units. There is also an increasing need for international coordination, particularly in activities related to the establishment of international tolerances for pesticides.

The need for interdepartmental coordination has become more important because various responsibilities relating to pests and their control are housed in a number of departments of the Federal government. In addition to USDA, the EPA, DHEW, DOL, DOT, and DOI all have legislative responsibilities relating to pests and pesticides. Coordination is achieved through the USDA Pesticide Committee and the Federal Working Group on Pest Management.

SELECTED EXAMPLES OF RECENT ACTIVITIES AND PROGRESS:

- 1 Scientists of the Department continued in the varied activities of the Federal Working Group on Pest Management and its five panels on research, monitoring, information, program review and safety.
- 2 Scientists participate in a Special Pesticide Review Group in EPA, and USDA scientists provide information on efficacy and need for pesticides being reviewed.
- 3 Pest management programs have been expanded to 14 states. Crops now included under pest management programs are cotton, apples, alfalfa, sweet corn and tobacco.
- 4 Initial planning was done to mount an intensive training program, in cooperation with EPA, to educate pesticide users on the increased hazards of using replacements for DDT, which was cancelled in June 1972, with an effective date of December 31, 1972.
- 5 Data was assembled and plans made in preparation for a forthcoming public hearing on aldrin and dieldrin. Our essential use list was refined in

accordance with most recent information from states having a need for the insecticides.

6. Research by DHEW identified ethylenethiourea, a degradation product of the ethylene-bis-dithiocarbamate fungicides, as a carcinogen. USDA personnel identified the needs for the fungicides, helped to evaluate possible risks of continued use, and initiated research to resolve unanswered questions. As a result, preharvest intervals were increased, but use of the fungicides was continued.
7. USDA coordinated work by State and Federal scientists in developing data on the effect of pesticides on the aquatic environment for a report required by EPA.
8. Stimulus was provided for the development of academic curricula designed to train students in systems of plant protection. Several colleges have started the initial phases of programs in which students will be taught the principles, techniques, and theory of protecting crops against all classes of pests.
9. Monitoring programs to determine the environmental impact of mirex when used for control of fire ant were continued and intensified to provide more reliable data.
10. Agreements were signed with Mexico to cooperate on eradication of screwworm.
11. Economic impact studies were conducted on various persistent pesticides at the request of EPA. These studies determined the costs that would be incurred if the use of certain pesticides were discontinued.
12. A coordinated, cooperative program on quarantine and control activities was established between Canada, Mexico, and the United States.
13. Remote sensing techniques were developed and used to detect outbreaks of citrus blackfly.

The following table shows the use of pesticide coordination funds in fiscal year 1972 and that estimated for 1973:

<u>Item</u>	<u>1972 Actual</u>	<u>1973 Estimate</u>
USDA Pesticide Safety campaign conducted by the Department and other public agencies and for coordinating Department pesticide information with other Federal agencies	\$24,287	\$25,000
Salary and benefits, related to Office of Pesticide Coordinator	27,492	28,100
Coordination of Department participation in aldrin/dieldrin and 2,4,5,-T hearings	8,488	30,500
Coordinate education and training need for certification of crop protection specialists	3,319	10,000
Coordinate with States essential uses of selected pesticides	- -	5,000
Coordinate contingency research on pesticides	- -	25,000
Coordinate forecasting of insect outbreaks that will require unusual pesticide use	- -	15,000

<u>Item</u>	1972 <u>Actual</u>	1973 <u>Estimate</u>
Toxic pesticides safety program	1,015	- -
Contract for assembly, compilation and reporting data on pesticides as they relate to the environment in general and to the aquatic environment in particular...	8,700	- -
Transcripts of the testimony on the DDT Hearings (Cost estimated on 4,000 pages)	5,966	- -
Balance	<u>78,733</u>	<u>19,400</u>
Total	<u>158,000</u>	<u>158,000</u>

Status of Construction Projects as of December, 1972

Status of research facilities authorized in prior years, and reported as uncompleted in the 1973 Explanatory Notes, is as follows:

Note: (Design criteria provided by ARS to specify the program requirements and form the basis for negotiation of architect-engineer contracts. Diagrammatic drawings provide the basis for the first review of the architect's design. Tentative drawings are provided by the architect for firming up cost estimates and as basis for developing the completed, and final working drawings).

<u>Location and Purpose</u>	<u>Funds Provided a/</u>		<u>Construction Status</u>
	<u>Year</u>	<u>Amount</u>	
<u>California, Albany</u> Wool utilization research.	1968 Plans	\$50,000 b/	Final working drawings completed in May 1970.
<u>California, Riverside</u> Soil and water conservation research.	1968 Plans	50,000 b/	Final working drawings completed in July 1970.
<u>Colorado, Akron</u> Soil and water conservation research.	1970 Plans 1973 Construction . Total	50,000 c/ 750,000 800,000	Architect-engineer contract awarded in February 1972. Final working drawings to be completed in the third quarter of fiscal year 1973. Construction funds are being withheld from use.
<u>Georgia, Athens</u> Richard B. Russell Agricultural Research Center - (includes farm, utilization, marketing, and nutrition and consumer use programs).	1964 Survey 1964 Construction* 1968 Construction . Total	216,000 9,500,000 1,200,000 10,916,000	Laboratory building completed in March 1969 and service building completed in May 1969. Additional improvements completed in October 1971.
<u>Louisiana, Baton Rouge</u> Soil and water conservation research	1971 Plans	80,000	Architect-engineer contract awarded in February 1972. Final working drawings to be completed in the second quarter of fiscal year 1974.

Status of Construction Projects as of December, 1972 - Cont.

<u>Location and Purpose</u>	<u>Year</u>	<u>Funds Provided a/</u>	<u>Amount</u>	<u>Construction Status</u>
<u>Maine, Orono</u> Soil and water conservation research.	1968 Plans	45,000 b/		Construction is expected to be completed in the third quarter of fiscal year 1973.
	1971 Construction .	600,000		
	Total	645,000		
<u>Maryland, Beltsville</u> Research on plant diseases, nematodes, and insects.	1965 Plans	338,000		Construction completed in July 1972.
	1968 Construction .	2,500,000		
	Total	2,838,000		
<u>Maryland, Beltsville</u> For construction of electrical substation and central incinerator at Agricultural Research Center.	1970 Construction*.	525,000		Completion of the new electrical substation in October 1972. Completion of the incinerator expected in the third quarter of fiscal year 1973.
<u>Michigan, East Lansing</u> Research on avian leukosis.	1963 Construction*.	450,000		Due to insufficient funds to install a disposal system in connection with a proposed new facility at East Lansing, Michigan a review of this project was made and it was determined to construct an addition to the existing building at this location in lieu of a new facility. Construction expected to be completed in the fourth quarter of fiscal year 1973.
<u>Minnesota, St. Paul</u> Cereal rust research.	1966 Plans	50,000		Construction completed in July 1972.
	1967 Construction .	600,000		
	Total	650,000		

Status of Construction Projects as of December, 1972 - Cont.

<u>Location and Purpose</u>	<u>Funds Provided a/</u>		<u>Construction Status</u>
	<u>Year</u>	<u>Amount</u>	
<u>Nebraska, Clay Center</u> Meat animal research (Phase I).	1966 Plans	300,000	Major construction completed in November 1970. Construction of additional animal and service facilities which were eliminated from the original plans because of cost escalation is in four packages. Construction completed for the first two packages in March 1972 and June 1972. Contracts for the remaining two packages were awarded in April 1972. Construction is estimated to be completed in the fourth quarter of fiscal year 1973.
	1967 Construction .	3,450,000	
	1971 Construction .	1,800,000	
	Total	5,550,000	
<u>Nebraska, Clay Center</u> Meat animal research (Phase II).	1968 Plans	250,000	Final working drawings completed in December 1971.
	1968 Plans (See footnote c/)	40,000 b/	Amount provided is insufficient to plan the facility as recommended under item 41 in Senate Document 59. A feasibility study has been made and a report submitted to the Congress March 25, 1968, recommended construction of a larger facility. Project is in "hold" status until additional funds for planning the larger facility are provided.
<u>New York, Plum Island</u> Additional animal and laboratory facilities.	1973 Plans	250,000	Design criteria being prepared. Architect-engineer contract expected to be awarded in the fourth quarter of fiscal year 1973.

Status of Construction Projects as of December, 1972 - Cont.

<u>Location and Purpose</u>	<u>Funds Provided a/</u>		<u>Construction Status</u>
	<u>Year</u>	<u>Amount</u>	
<u>New York, Plum Island</u> Air pollution abatement and sewage control equipment.	1973 Plans and Construction*	1,060,000	Architect-engineer contract for waste treatment system awarded in November 1972. Award of A-E contract for modification of incinerators awaiting tests of stock emissions.
<u>Oregon, Corvallis</u> Ornamental research.	1966 Plans	21,500 b/	Construction contract was awarded in May 1972. Construction is expected to be completed in third quarter of fiscal year 1973.
	1971 Construction.	515,000	
	Total	536,500	
<u>Texas, Temple</u> Grassland restoration.	1968 Plans	150,000	Construction contract awarded in October 1971. Construction is expected to be completed in the third quarter of fiscal year 1973. Design criteria being prepared for the additional con- struction authorization. A-E contract negotiation anticipated in January 1974.
	1971 Construction.	1,500,000	
	1973 Construction.	500,000	
	Total	2,150,000	
<u>Washington, Puyallup</u> Ornamental research.	1968 Plans	3,500 b/	Construction contract awarded in June 1972. Construction is expected to be completed in the third quarter of fiscal year 1973.
	1971 Construction.	85,000	
	Total	88,500	
<u>West Virginia, Beckley</u> Soil and water conservation research.	1972 Plans	70,000	Architect-engineer contract awarded in January 1972. Final working drawings completed in December 1972, Construction funds have been withheld from use.
	1973 Construction.	700,000	
	Total	770,000	
<u>Northeastern Appalachian Region</u> Fruit crop laboratory.	1973 Plans	200,000	Planning funds have been withheld from use.

Status of Construction Projects as of December, 1972 - Cont.

- a/ Asterisks under this heading indicate that planning funds were not appropriated separately but are included in the funds appropriated for construction.
- b/ Funds provided from the Contingency Research Fund.
- c/ Since \$50,000 appropriated in 1970 for planning a Soil-Water-Plant Research Laboratory, Ithaca, New York, and Soil and Water Research Laboratory, Akron, Colorado is insufficient to plan both of these facilities, the full amount will be used at Akron, Colorado.

CONTINGENCY RESEARCH FUND

The Contingency Research Fund, established by Congress in fiscal year 1962, is designed to provide a ready source of funds to meet unforeseen and immediate research needs. Releases from the funds are generally made in situations where an emergency exists, or for special needs such as an unexpected scientific "breakthrough", or for new diseases or pest problems where it appears inadvisable to wait for consideration of a request for funds for the project in the regular budget process. In allocating funds, the procedure ordinarily is to make no commitments for allocations from the fund beyond the current year.

In fiscal year 1972, releases from the Contingency Research Fund were made for the following purposes:

1972 Obligations

Animal Science Research:

For equipment and animal care to determine the biological effects of environmental pollutants of industrial origin in dairy cattle and milk products, Beltsville, Md.	\$33,503
To partially cover a cooperative agreement with the University of Kentucky to study the development and persistence of multi-drug resistant micro-organisms following antibiotic feeding to pigs	40,000

Veterinary Sciences Research:

For equipment, animals and related expenses necessary to provide special training courses for veterinary diagnosticians on African swine fever and other exotic diseases, Plum Island, N.Y.	32,550
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Plant Science Research:

For laboratory equipment to conduct physiology studies on the pickling properties of onions and carrots	31,192
For laboratory modification and equipment to permit consolidation of the Hard Winter Wheat Quality Laboratory in the Grain Marketing Research Center at Manhattan, Kansas	69,980
To accelerate research to determine the significance of newly discovered viroid particles, Beltsville, Md.	23,000
To set up emergency screening plots for checking sugarcane resistance to sugarcane smut, a new disease that has recently entered Hawaii	50,000
To initiate grass breeding research at Mandan, N.D., on selection and development of grasses adapted to northern irrigated conditions	9,108

Entomology Research:

For a special study on sterile insect releases for the control of cabbage loopers	\$60,817
Emergency study on behavior, attractants for, and rearing methods for the "primary" screwworm to meet new program needs in Texas and Mexico	30,000
Research to develop mass rearing techniques for parasites of the citrus black fly in Texas and Mexico	50,066
Special boll weevil sexing program in support of pilot boll weevil eradication experiment in Mississippi	24,999
Purchase of special long-lasting granlure sex pheromone attractant for the Mississippi boll weevil project	20,986

Soil and Water Conservation Research:

For research on recycling sewage sludge on agricultural land, with special concern for ecological impacts	32,409
For special equipment and laboratory facilities to be installed at Fort Collins, Colorado for soil chemistry studies	82,654
Emergency replacement of infra-red CO ₂ analyzers for continuous CO ₂ measurement in plant canopies	16,500

Agricultural Engineering Research:

Equipment to provide operational safety on tillage plot equipment carriages at National Tillage Machinery Laboratory at Auburn, Alabama	4,642
Multi-module micro-wave processor for heating hatching eggs to eliminate mycoplasma organisms at South Central Poultry Research Laboratory	5,000

Eastern Marketing and Nutrition Research:

For special equipment and facilities to accelerate vital investigations of the occurrence of nitrosamines in meats	29,946
Renew U.S. funding in International Committee on Microbial Specifications for Foods	50,000

Human Nutrition Research:

Contract with American Institute of Nutrition for expert panel studies on status of knowledge on human nutrition for third report in Agricultural Research Policy Advisory Committee series (extramural)	35,918
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1972 Obligations

Market Quality Research:

For special equipment necessary for residue analysis in developing alternative materials for pyrethrins	\$48,000
Study on control of insects in farm stored tobacco in North Carolina (extramural)	34,365

Transportation and Facilities Research:

To continue research on wholesaling and retailing in accord with the directive in House Report 92-289 on the Appropriation Bill, 1972	<u>95,002</u>
Total, 1972 Obligations	<u>910,637</u>
Unobligated balance	<u>89,363</u>
Total, available, 1972 Contingency Research Fund ..	<u>\$1,000,000</u>

Current activities. As of January 1973, a total of \$575,250 has been approved for release from the Contingency Research Fund in F.Y. 1973.

1973 Estimated
Obligations

Animal Science Research:

For purchase, application, and evaluation of radioactive Diethylstilbestrol (DES) as a growth stimulant for beef cattle	\$42,885
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Plant Science Research:

For extramural research on problems related to the varieties, diseases, and harvesting of wild rice	45,000
To determine the degradation and fate of five major fungicides and their toxic degradation product, Ethylenethiourea (ETU), in plants and soils	15,000
To determine the metabolic fate of Ethylenethiourea (ETU) in plants	5,600

Entomology Research:

To expand screwworm research to assist in solving critical problems associated with the Animal and Plant Health Inspection Service eradication program	75,000
To develop technology to aid the Animal and Plant Health Inspection Service in eradicating rapidly spreading infestations of the citrus blackfly	35,000
For research to appraise performance of boll weevil pheromone in pilot boll weevil eradication experiment	75,000

1973 Estimated
Obligations

Soil and Water Conservation Research:

To develop facilities for studying the use of sewage
sludge on agricultural lands \$55,000

For research on increasing irrigation efficiency in
the Colorado River Basin through salinity control 117,175

Eastern Marketing and Nutrition Research:

For extramural research on the interactions of potato
blight, potato glycoalkaloids, pest resistance, and
alleged teratogenic effects from ingestion of blighted
potatoes 81,000

Market Quality Research:

For extramural research on an internal disorder of
wet-type (yam) sweet potatoes 28,590

Total 1973 approved for release from the
Contingency Research Fund 575,250

Unallocated balance 424,750

Total available, 1973 Contingency Research Fund .. 1,000,000

(b) Scientific Activities Overseas (Special Foreign Currency Program)

Appropriation Act, 1973 10,000,000
Budget Estimate, 1974 10,000,000

PROJECT STATEMENT
(On basis of appropriation)

Project	1972	1973	Increase	
	Current Estimate	Current Estimate	or Decrease	1974 Estimate
1. Market development research :	:	:	:	:
Section 104(b) (1)	\$2,087,000	\$2,087,000	\$ - -	\$2,087,000
2. Agricultural and forestry re-:	:	:	:	:
search Section 104(b) (3) <u>a/</u> :	7,763,000	7,613,000	-150,000:	7,463,000
3. Translation and dissemination:	:	:	:	:
of scientific publications, :	:	:	:	:
Section 104(b) (3)	150,000	300,000	+150,000:	450,000
Total, available or estimate	10,000,000	10,000,000	- -	10,000,000

The following statement reflects carryover into succeeding years of actual or estimated prior year balances and shows total actual or planned obligations.

PROJECT STATEMENT
(On basis of available funds)

Project	1972	1973	Increase	
	Current Estimate	Current Estimate	or Decrease	1974 Estimate
1. Market development research :	:	:	:	:
Section 104(b) (1)	\$840,403	\$3,800,000	-1,713,000:	2,087,000
2. Agricultural and forestry <u>a/</u> :	:	:	:	:
research Section 104(b) (3) :	5,707,656	10,691,830	-3,228,830:	7,463,000
3. Translation and dissemination:	:	:	:	:
of scientific publications :	:	:	:	:
Section 104(b) (3)	146,005	316,272	+133,728:	450,000
Total, obligations	6,694,064	14,808,102	-4,808,102:	10,000,000
Unobligated balance, start of :	:	:	:	:
year	-1,502,166	-4,808,102	+4,808,102:	- -
Unobligated balance, end of year.:	+4,808,102	- -	- -	- -
Total, available or estimate	10,000,000	10,000,000	- -	10,000,000

a/ No new forestry research projects are proposed in 1974. The Forest Service proposes a \$1,000,000 program of Special Foreign Currency forestry research in 1974. The Agricultural Research Service will continue to provide administrative support for the forestry research program.

The following table shows the estimated distribution by country of the appropriation requested for 1974, and the estimated expenditures for 1973 and 1974. These are expenditures to purchase the currencies and are not the same as obligations during the year.

Country	Distribution of Appropriation Requested for 1974	Estimated Expenditures	
		1973	1974
Austria	- -	\$ 2,415	\$ - -
Belgium	- -	171	- -
Burma	250,000	37,200	96,200
Ceylon	- -	70,000	112,000
Colombia	- -	2,981	- -
Egypt	1,000,000	341,000	700,000
Finland	- -	2,231	2,000
France	- -	5,843	3,000
Greece	- -	9,300	4,668
Germany	- -	2,658	300
India	2,000,000	2,875,000	2,758,500
Israel	- -	1,292,062	331,500
Italy	- -	110,000	68,000
Japan	- -	500	7,062
Morocco	- -	140,000	135,000
Netherlands	- -	1,000	1,000
Pakistan	3,350,000	1,191,000	1,802,500
Philippines	- -	500	4,359
Poland	3,250,000	1,379,000	2,162,500
Spain	- -	5,132	2,000
Sweden	- -	644	300
Switzerland	- -	613	200
Tunisia	150,000	85,000	239,500
Turkey	- -	6,326	1,000
U. Kingdom	- -	9,000	9,500
Yugoslavia	- -	2,471,424	2,599,911
Total	10,000,000	10,041,000	11,041,000

STATUS OF PROGRAM

In fiscal year 1958, the Department initiated a research grant program abroad utilizing foreign currencies from the sale of surplus agricultural commodities under Title I of Public Law 480. Originally confined to market development research authorized by section 104(b)(1) of P.L. 480, as amended, the program was subsequently expanded to include agricultural and forestry research under section 104(b)(3) of the law, as amended. In fiscal year 1966, the authorization changed to permit the use of all excess currencies for work performed under the Special Foreign Currency Program. Activities sponsored fall into the following general areas:

1. Farm research, including research on plant science, entomology, animal science, veterinary sciences, soil and water conservation and agricultural engineering.
2. Utilization research, including the development of new or improved methods of utilizing agricultural materials.
3. Marketing research, including studies of food and fiber preference of foreign consumers, improvement of quality and acceptability of U.S. agricultural products in foreign markets, and improvement in handling and storage of agricultural products.
4. Forestry research, including research on the protection of forests from fires, disease and insects; on methods and procedures for increasing the growth of managed forests, and on properties and uses of forest products.
5. Agricultural economics research, including farm and market economics research and foreign trade analysis.
6. Human nutrition research, including food composition, experimental nutrition, and human metabolism research.

Dollar-financed research in these areas is conducted by the Agricultural Research Service, the Forest Service and the Economic Research Service in their respective areas of functional and subject-matter responsibilities. Research under this program is designed to complement and not to duplicate or displace the dollar-financed research activities of these agencies.

Within the Department, primary responsibility for administration of this program is assigned to the Agricultural Research Service. The activities are coordinated with operations in the Forest Service and Economic Research Service through a Policy and Program Development Board consisting of members of these Services and the Foreign Agricultural Service. This Board develops broad policies for operations of the program and coordinates the activities of the various Department agencies in carrying out research financed by foreign currencies. Initial arrangements and budget clearances for the research in foreign countries are made through the Department of State as required by Executive Order 10900, section 3(b) and (c), and through the Agricultural Attaches of the Foreign Agricultural Service of the Department.

Prior to executing any research agreement with a foreign institution, the Department again consults with the Agricultural Attaches and Heads of Missions to insure that the proposed projects would be consonant with the foreign policy of the United States.

Great care is exercised to make certain that research projects undertaken benefit American agriculture and do not develop undesirable competition for American agricultural products abroad. Careful attention is given to the type of institution conducting research under this program to make certain it has the facilities, equipment, and personnel to carry out sound and productive research. Because of

these high standards about 56 percent of the proposals received from foreign institutions have been rejected by the Department; 39 percent of the proposals have been accepted, and agreements have been executed or are awaiting execution; and final determination has not yet been made on acceptance or rejection of the remaining 5 percent.

Selected Examples of Recent Progress: Through June 30, 1972, a total of 1,416 research agreements have been obligated with foreign research institutions. In fiscal year 1972, 121 agreements were obligated. Agreements vary in total amount for the life of the project from approximately \$12,000 to slightly over \$300,000. Examples of research progress under these agreements follow:

FARM RESEARCH

1. Foot-and-mouth disease (FMD). An Israeli study has indicated that the nonspecific neutralizing activity of cattle serum for foot-and-mouth disease (FMD) virus is genetically controlled. Evidence for this was obtained by testing sera from the vaccinated daughters of specific bulls and finding that there was a family relationship in the response. The test virus (SAT-1) differed from the O and A types used in the vaccine. The nonspecific neutralizing activity was mainly found in the early-formed antibody (19 S) of the IgM fraction of the sera. This information is of immediate use to the United States in the interpretation of cross reactions in neutralization tests for the diagnosis of FMD.
2. Wheat rust. Rust virulence was studied in Egypt, Libya, Saudi Arabia, Algeria, Iran, and Ethiopia. Over 6,000 strains of wheat were tested using certain of the rust cultures found. Varieties carrying resistant genes were sent to the U.S. to determine if the resistant genes carried are different from those in U.S. wheats. This work adds new information on rust race distribution and effectiveness of sources of resistance, new genetic information, and new germplasm. Control of rust by breeding is by far the most effective, safest, and practical means of combating this disease. Rich sources of germplasm and information about the pathogen are essential to future efforts to maintain control.
3. Fruit tree viruses. The U.S. plum and apricot crops are valued at over \$60,000,000. The Sarka virus disease of plums and apricots is destructive in 14 European countries, but is not yet in the United States. Research in Yugoslavia has shown ways to delay or prevent entry of Sarka disease into the United States and has provided a basis for controlling it or living with it when it eventually arrives. Prunus mahaleb, commonly used as a rootstock in the United States, was believed not to be susceptible to Sarka. This research has shown it to be susceptible. Prunus spinosa, a common wild plum, was proven to be a symptomless carrier; and a number of herbaceous plants were also found susceptible. This information points to quarantine procedures needed to help exclude Sarka. Three strains of the Sarka virus have been found. An antiserum has been developed to help in rapid identification of the virus. Four aphid species have been confirmed as transmitters of this virus in Europe. All four occur in the United States, and the virus can be expected to spread rapidly if it should be introduced. Several U.S. grown plum cultivars were found to be tolerant to Sarka in Yugoslavia, but the commonly grown Italian prune is highly susceptible.
4. Seed production. Under a SFC research grant with West Germany, seed of six forage varieties originating in Central Europe has been increased for two to four generations successfully in the United States. Approximately 6 million pounds of certified seed of foreign grass and legume varieties is currently being produced in the United States, strictly for export. Opportunities to expand export markets for U.S. grown seed of foreign varieties are contingent upon the maintenance of genetic constancy during seed increase. These investigations have provided a better understanding of the occurrence of genetic shifts under some environmental pressures, such as day length, temperatures, and farming practices.

The studies clearly show that if reasonable seed production practices are followed, seed of alfalfa, red and white clover, meadow fescue, perennial ryegrass, and timothy can be grown in the U.S. with no significant changes in the population structure of the varieties; thus increasing the U.S. export market potential.

5. Liver flukes of livestock. Liver flukes cause extensive losses in cattle and sheep production in many areas of the world, including the United States. Contributing significantly to these losses is the large number of livers that have to be condemned at slaughter because of infection with flukes. Research conducted in Yugoslavia has demonstrated that a type of immunity develops following infection with liver flukes. The development of antibodies was demonstrated through the use of a number of different corroborative immunochemical procedures. Antibodies were detected as early as 14 days following infection and for as long as 6 months after infection. Gonadal tissue which developed as the parasite approached sexual maturity was one of the more important sources of the antigenic material which induced the immune response. Flukes rendered sexually sterile through irradiation with X-rays during an immature, developmental stage retained the capacity to stimulate an immune response when used to infect experimental animals. These findings open the way for the biological control of liver flukes through induction of immunity in livestock by infection with irradiated, immature flukes prior to grazing in fluke-infested areas.
6. Stream sedimentation. Scientists in Israel have completed studies on the automatic measurement of bedloads in streams. In the past, investigators in this field have been handicapped by deficiencies in the equipment available for sampling and measuring. The Israeli research has resulted in two new devices for measuring stream bedload and also has given us new knowledge concerning transport and deposition of bed materials by flowing water. These devices and the new knowledge developed will contribute to establishment of acceptable stream flowbed sediment discharge relationships. Better measurement of bedload in streams will contribute to economical and safe designs for stream channels, ponds, reservoirs, dikes, canals, and other riparian structures. The effects of natural and man-made changes on runoff waters, scour, transport, and deposition of stream bed material can be studied more accurately with these new devices and new information. Agricultural interests and the general public can benefit directly from application of these new devices and new knowledge in this field.

UTILIZATION RESEARCH AND DEVELOPMENT

7. Apple products. In Switzerland, studies were made on the role of enzymes in flavor formation in apples. The investigations showed that pectolytic enzymes contain acetylsterases as impurities which are important in the aroma of apples. Analytical methods developed at the USDA, ARS, Western Regional Research Laboratory, Albany, California, were applied in this study, and such methods can be utilized to determine when apples should be processed for optimum flavor. Apple essence is in demand now, since it is used in the production of apple wines which have become popular. Methods developed and applied in this study can be utilized to make essence of optimum flavor. As a result of these findings, enzyme manufacturers have expressed interest in purifying their enzyme preparations prior to sale. Through use of this information, the U.S. fruit juice processing industry can make a better product and increase their markets.
8. Cotton processing. Indian scientists have been working on the effect of atmospheric conditions during the spinning of cotton yarns on yarn properties and spinning efficiency. While the American cotton textile industry has known in a general way, and for many years, the approximate atmospheric conditions needed in the mills for optimum processing results, this work pin-pointed specific ranges of temperatures and relative humidities required for optimum processing conditions and yarn strengths for American-type cottons covering the staple length range from 15/16th inch to 1-7/16th inches. The research findings contribute to the knowledge required for increasing the use of American cotton in competition with foreign cottons and with manmade fibers.

FORESTRY RESEARCH

9. Walnut tree breeding. In Yugoslavia, scientists investigating the breeding of walnut trees for high quality wood products developed a tree-tipping procedure which is more efficient and safer for controlled pollination, than the conventional method of climbing trees. This method will be used in the U.S. on a trial basis to study its effect on long-term fruit production. In addition, the USDA is testing the "modified Geisenheim method" that proved so successful in Yugoslavia. If the USDA's results confirm those of the Yugoslavs, the technique could be used exclusively in the United States. Seed exchange between the United States and Yugoslavia has been extensive and good use will be made of the Yugoslav plant material in U.S. walnut breeding for fruit and timber.

10. Phenolic chemicals in forest trees. Phenolic chemicals play a vital role in the physiology of forest trees, contributing to color, stiffness, natural resistance to insects and diseases, and to virtually all life processes of the tree. Basic chemical research in India on 41 Indian and U.S. species has resulted in characterization of a major portion of the phenolic fractions. Forty-seven new natural products have been isolated. This phenolic chemical information bears on the related phenolic chemistry of shade trees and agricultural plants. It is broadly useful in clarifying biosynthetic and evolutionary pathways of plants in chemotaxonomic identification of trees. Nine of the isolated phenolic chemicals were screened for biocidal activity. None were effective. This screening, which will include termite reactions, will continue under a new project as part of a general agricultural interest in discovering and evaluating new natural biocides to replace some of the chemicals now in our arsenal of pesticides with natural products from plants.

Special Foreign Currency Program
Research Proposals and Agreements by Subject Matter
(Cumulative: to June 30, 1972)

	<u>Number of Proposals</u>				<u>Total Number of Agreements Obligated</u>			<u>Total Number of Agreements Currently Active</u>		
	<u>Received</u>	<u>Rejected</u>	<u>Awaiting Modification or Review</u>	<u>Approved (Proposals) Awaiting Obligation</u>	<u>Number</u>	<u>Dollar Equivalent</u>	<u>Number</u>	<u>Dollar Equivalent</u>	<u>Number</u>	<u>Dollar Equivalent</u>
Farm Research	2,353	1,339	118	160	736	\$45,106,356	296	\$19,615,187		
Utilization Research	973	575	40	16	342	19,664,260	66	3,255,502		
Marketing Research	219	115	8	11	85	4,681,003	30	1,734,690		
Forestry Research	465	219	23	44	179	10,322,885	53	4,003,096		
Human Nutrition Research ..	82	45	3	- -	34	1,634,837	11	657,517		
Agricultural Economics Res.	150	99	3	9	39	1,708,078	20	953,649		
Statistical Reporting Ser...	3	2	- -	- -	1	32,073	- -	-1,467		
Totals	<u>4,245</u>	<u>2,394</u>	<u>195</u>	<u>240</u>	<u>1,416</u>	<u>\$ 83,149,492</u>	<u>476</u>	<u>\$30,218,174</u>		

Special Foreign Currency Program
Approved Research Proposals and Agreements Obligated by Country
(Cumulative: to June 30, 1972)

<u>Country</u>	<u>Approved Proposals Awaiting Obligation</u>	<u>Research Agreements Obligated</u>	
		<u>Number</u>	<u>Dollar Equivalent</u>
<u>Europe</u>			
Austria	-	4	\$187,353
Belgium	-	3	190,331
Finland	-	45	2,507,676
France	-	24	1,518,806
Germany, West	-	8	419,214
Greece	-	4	188,338
Italy	-	36	1,884,329
Netherlands	-	10	707,220
Poland	19	175	9,104,206
Spain	-	50	2,608,704
Sweden	-	8	597,336
Switzerland	-	3	180,613
United Kingdom	-	51	3,690,673
Yugoslavia	84	133	11,486,881
Subtotal, Europe	103	554	35,271,680
<u>Asia</u>			
Ceylon	-	8	262,168
India	90	418	18,869,257
Israel	-	202	17,881,334
Japan	-	26	865,183
Korea	-	5	106,534
Pakistan	28	93	3,937,140
Philippines	-	3	39,744
Taiwan (China)	-	13	240,056
Turkey	-	15	467,620
Subtotal, Asia	118	783	42,669,036
<u>Africa</u>			
Morocco	1	3	354,555
Tunisia	2	2	138,575
Egypt (AR)	16	21	1,424,520
Subtotal, Africa	19	26	1,917,650
<u>Oceania</u>			
Australia	-	3	192,413
<u>South America</u>			
Brazil	-	18	1,069,593
Chile	-	4	142,735
Colombia	-	13	762,541
Peru	-	4	265,724
Uruguay	-	11	858,120
Subtotal	-	50	3,098,713
Total	240	1,416	\$83,149,492

Obligations, Expenditures and Conversions of Foreign Currencies

Obligations: Through June 30, 1972, a total of \$87,533,553 (including \$3,703,533 for administrative expenses) has been obligated for activities under the Special Foreign Currency Program. In fiscal year 1973, an additional \$14,808,102 will be used. These obligations are summarized as follows:

Cumulative Obligations through F. Y. 1973
(dollars in thousands)

	Market Development Research (sec. 104(b) (1))	Agricultural and Forestry Research (sec. 104(b) (3))	Translation of Publications and Scientific Cooperation, Executive Office of the President ^{a/}	Total
1958	\$ 371.5	- -	- -	\$ 371.5
1959	1,651.8	- -	\$ 1.7	1,653.5
1960	2,230.5	- -	793.2	3,023.7
1961	1,893.2	- -	1,565.2	5,290.8
1962	2,859.0	\$ 1,832.4	595.8	8,749.4
1963	2,566.3	5,294.6	248.6	7,815.6
1964	3,214.8	5,000.7	555.5	8,236.7
1965	3,485.8	4,466.4	72.2	8,966.1
1966	703.7	5,408.1	-199.5	4,381.6
1967	1,620.6	3,877.4	114.5	9,688.3
1968	991.9	7,953.2	-44.1	7,264.8
1969	971.9	6,317.0	- -	5,705.1
1970	790.5	4,733.2	- -	4,866.5
1971	654.0	4,076.0	- -	4,825.8
1972	840.4	4,171.8	- -	6,694.0
1973(est.)	2,151.1	5,853.6	- -	14,808.1
Totals	<u>\$26,997.0</u>	<u>12,657.0</u>	<u>\$ 3,703.1</u>	<u>\$102,341.5</u>

^{a/} This fund merged with Special Foreign Currency Program by the Department of Agriculture and Related Agencies Appropriation Act, 1969.

The following tables present a more detailed picture of the \$6,694,064 obligated in 1972 and the \$14,808,102 estimated to be obligated in 1973 for the Special Foreign Currency Program.

Special Foreign Currency Program, FY 1972 Obligations
(In thousands)

Country	Market Development Research Section 104(b)(1)		Agricultural and Forestry Research Section 104(b)(3)					Total
	Utili- zation Research	Marketing Research	Farm Research	Human Nutrition Research	Agri- cultural Economics Research	Forestry Research	Marketing Research	
Austria	\$.4	-	-	-	-	-	-	\$.4
Belgium	-.2	-	-	-	-	-	-	-.2
Brazil	-	-	\$.6	-	-	-	-	.6
Ceylon	-	-	-	-	-	\$43.3	-	43.3
Colombia	-.1	-	.9	-	\$.1	.2	-	1.1
Egypt (A.R.)	-	-	257.6	-	-	-	-	257.6
Finland	-2.4	-	-	-	-	-7.7	-	-10.1
France	1.2	-	-	-	-	-	-	1.2
Germany, W.	-1.0	\$-1.5	-	-	-	-	-	-2.5
Greece	-	-	-	-	-	.9	-	.9
India	637.7	47.5	1,516.5	-	85.0	153.9	\$97.7	2,538.3
Israel	-98.0	-	-279.4	\$-8.5	-8.0	-40.0	-9.0	-442.9
Italy	64.2	9.6	-10.0	-	-	-15.1	-	48.7
Japan	-1.4	-	-	-	-	-	-	-1.4
Morocco	-	-	303.2	-	-	-	-	303.2
Netherlands	-.3	-	-	-	-	-	-	-.3
Pakistan	-114.1	-70.0	-191.4	-	-8.6	-90.0	-	-474.1
Philippines	-	-	-.3	-	-	-	-	-.3
Poland	97.7	61.3	845.8	-	-	250.7	-	1,255.5
Spain	.3	-	-	-	-	.5	-	.8
Sweden	-.1	-	-	-	-	-	-	-.1
Switzerland	-.2	-	-	-	-	-	-	-.2
Tunisia	-	-	-59.4	-	-	-	-	-59.4
Turkey	-	-	.5	-	-	-	-	.5
United Kingdom	9.3	-	-	-	-	-	-	9.3
Yugoslavia	200.5	-	2,069.3	129.0	83.5	531.0	64.8	3,078.1
Total	\$793.5	\$46.9	\$4,453.9	\$120.5	\$152.0	\$827.7	\$153.5	\$6,548.0
Transfer to National Science Foundation for translation of scientific publications								
							146.0	
GRAND TOTAL							\$6,694.0 a/	

a/ Includes net recoveries on obligations incurred in prior years and fiscal year 1972 in the amount of \$2,022,502. These recoveries are primarily due to fluctuation in exchange rates relating to the unliquidated obligations.

Special Foreign Currency Program, Estimated FY 1973 Obligations
(In thousands)

Country	Market Development Research Section 104(b)(1)		Agricultural and Forestry Research Section 104(b)(3)					Total
	Utili- zation Research	Marketing Research	Farm Research	Agri- cultural Economics Research	Forestry Research	Marketing Research	Human Nutrition Research	
Burma	-	-	\$150.0	\$7.2	\$92.8	-	-	\$250.0
Egypt (A.R.)	-	\$82.5	1,313.8	-	136.0	-	-	1,532.3
Germany, W.	\$3.1	-	-	-	-	-	-	3.1
Greece	-	-	-	-	.2	-	-	.2
India	1,149.7	-	1,530.5	-	582.0	-	-	3,262.2
Israel	-	-	8.0	-	1.0	-	-	9.0
Italy	17.1	-	50.0	-	5.5	-	-	72.6
Japan	1.0	-	-	-	-	-	-	1.0
Morocco	-	-	4.3	-	-	-	-	4.3
Pakistan	-	-	1,692.8	517.7	803.9	-	-	3,014.4
Poland	600.3	54.1	1,436.5	-	803.3	\$83.6	\$44.2	3,022.0
Spain	-	-	-	1.0	1.0	-	-	2.0
Tunisia	-	-	239.6	-	10.4	-	-	250.0
Turkey	-	-	-	-	.4	-	-	.4
United Kingdom	5.2	-	-	-	-	-	-	5.2
Yugoslavia	238.1	-	2,118.7	123.1	446.3	36.9	-	2,963.1
Totals	\$2,014.5	\$136.6	\$8,544.2	\$649.0	\$2,882.8	\$120.5	\$44.2	\$14,391.8
Transfer to National Science Foundation for translation of scientific publications								416.3
GRAND TOTAL								\$14,808.1

Expenditures: Expenditures of foreign currencies, from the inception of the program through June 30, 1972, totaled \$70,304,821. In addition, the Department plans to expend \$10,041,000 in fiscal year 1973. These expenditures maybe summarized as follows:

Cumulative Expenditures through F. Y. 1973
(In thousands)

<u>Fiscal Year</u>	<u>Market Development Research</u>	<u>Agricultural and Forestry Research</u>	<u>Translation of Publications and Scientific Cooperation Executive Office of the President <u>a/</u></u>	<u>Total</u>
1959	\$ 195.1	\$ - -	0.1	\$ 195.2
1960	654.6	- -	75.1	729.7
1961	1,254.9	350.2	495.2	2,100.3
1962	1,735.8	1,351.8	425.6	3,513.2
1963	2,136.8	2,071.7	590.9	4,799.4
1964	2,292.9	2,514.9	655.5	5,463.3
1965	2,816.3	3,724.6	616.0	7,156.9
1966	2,435.2	4,113.9	211.2	6,760.3
1967	2,487.0	4,754.6	224.7	7,466.3
1968	1,951.0	5,028.8	200.5	7,180.3
1969	1,598.9	5,454.6	- -	7,053.5
1970	1,092.6	4,863.4	- -	5,956.0
1971	955.9	4,753.1	- -	5,709.0
1972	884.2	5,337.3	- -	6,221.5
1973	1,463.4	8,577.6	- -	10,041.0
Total	<u>23,954.6</u>	<u>52,896.5</u>	<u>3,494.8</u>	<u>80,345.9</u>

Cumulative Expenditures through F. Y. 1973 (Contd.)
(In thousands)

Conversions: As of June 30, 1972, the Department had converted a total of \$4,833,448 of foreign currencies as follows:

<u>Fiscal Year</u>	<u>(Dollars in thousands)</u>
1961	\$ 770.0
1962	1,432.0
1963	1,910.1
1964	721.3
Total	<u>4,833.4</u>

a/ This fund merged with Special Foreign Currency Program by the Department of Agriculture and Related Agencies Appropriation Act, 1969, are included in the preceeding table.

(c) Working Capital Fund, Agricultural Research Center

This Working Capital Fund is a continuing operating fund established by the 1951 Agricultural Appropriation Act with an appropriation of \$300,000 to finance the operating costs of certain centralized services and facilities at the Agricultural Research Center, Beltsville, Maryland, pending receipt of reimbursements for such costs from the agencies provided with the services. The integrity of the original appropriation is maintained from year to year by means of these reimbursements.

The financial status of the working capital fund is as follows:

	June 30, 1972 (Actual)	June 30, 1973 (Estimated)	June 30, 1974 (Estimated)
<u>Assets:</u>			
Cash	\$463,883	\$464,000	\$464,000
Accounts receivable	769,807	770,000	770,000
Materials and supplies .	185,070	185,000	185,000
Equipment	304,423	304,000	304,000
Total assets	<u>1,723,183</u>	<u>1,723,000</u>	<u>1,723,000</u>
<u>Liabilities (current)</u>	<u>952,329</u>	<u>952,000</u>	<u>952,000</u>
<u>Government Equity:</u>			
Initial appropriation ..	300,000	300,000	300,000
Donated assets	408,837	409,000	409,000
Retained earnings	62,017	62,000	62,000
Total Government equity	<u>770,854</u>	<u>771,000</u>	<u>771,000</u>

Obligations by activities for the central services financed through the Working Capital Fund are as follows:

	1972 (Actual)	1973 (Estimated)	1974 (Estimated)
1. Farm operations (Plowing, seeding, cultivating, spraying, harvesting and other farm operations related to field crop experiments and production of feed for experimental farm animals)	456,677	467,000	471,000
2. Maintenance, repair, construction and alteration of research facilities	1,443,569	1,476,000	1,488,000
3. Maintenance and operation of research service facilities (Heating plant, sewage plant, water treatment and plumbing stations, and service operations such as guard, janitor and messenger service	1,858,310	1,900,000	1,916,000
4. Upkeep of roads and grounds	269,397	275,000	278,000
5. Materials and supplies, utilities, and equipment	<u>2,365,228</u>	<u>2,418,000</u>	<u>2,438,000</u>
Totals	<u>6,393,181</u>	<u>6,536,000</u>	<u>6,591,000</u>

Services are chiefly for the Agricultural Research Service. Other Department agencies which receive service are the Agricultural Marketing Service, Animal and Plant Health Inspection Service, Forest Service, National Agricultural Library, Extension Service, and Soil Conservation Service. Other Federal agencies serviced include the Department of Commerce, Department of Health, Education and Welfare, Department of Interior, Department of the Navy, District of Columbia, General Services Administration, Environmental Protection Agency, U. S. Secret Service and the National Aeronautics and Space Administration. The services are financed as follows:

	1972 (Actual)	1973 (Estimated)	1974 (Estimated)
Agricultural Research Service	\$5,058,924	\$5,172,000	\$5,216,000
Other USDA agencies	706,447	722,000	728,000
Other than USDA agencies	<u>627,810</u>	<u>642,000</u>	<u>647,000</u>
Total	<u>6,393,181</u>	<u>6,536,000</u>	<u>6,591,000</u>

AGRICULTURAL RESEARCH SERVICE

PASSENGER MOTOR VEHICLES

The 1974 Budget Estimates does not include any purchase of additional passenger motor vehicles. A total of 118 vehicles will be replaced.

Replacements

Replacements would be made of 118 (includes 0 buses) of the 490 (including 6 buses) passenger motor vehicles operated at field stations engaged in research. These vehicles are used in travel where no public transportation is available, such as to farms, ranches, cooperating experiment stations, etc., and in travel to remote sections of large stations. They are essential for collecting experimental data and materials necessary for facilitating research work.

It is estimated that all of the 118 passenger vehicles to be replaced will either have mileage of more than 60,000 or be 6 or more years old.

Age and Mileage Data for passenger-carrying vehicles on hand as of June 30, 1972:

Age-Year Model	Age Data		Mileage Data		
	Number of Vehicles	Percent of Total	Lifetime Mileage (thousands)	Number of Vehicles	Percent of Total
1964	16	3	80-100	10	2
1965	57	12	60-80	54	12
1966	52	11	40-60	120	25
1967	15	3	20-40	149	31
1968	71	15	Under 20	144	30
1969	84	18			
1970	83	17			
1971	91	19			
1972	8	2			
Total	477	100		477	100

* Excludes 4 vehicles used in foreign countries, and 6 buses.

AIRCRAFT

Replacements

The one replacement plane would be one designed specifically for agricultural work, and would be used by technicians in investigating and demonstrating the use of special equipment for suppression of destructive insects attacking crops. Replacement will be made by purchase or from surplus sources. Planes rapidly become obsolete and uneconomical to repair and are subject to many mishaps. Replacement will not be made, however, if it is found practical and economically feasible to retain the present equipment.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

Purpose Statement

The Animal and Plant Health Inspection Service was established by the Secretary of Agriculture on April 2, 1972, under the authority of the Reorganization Plan No. 2 of 1953, and other authorities. The programs of the Service include all programs formerly performed by the Animal and Plant Health Service, and the meat and poultry inspection program formerly carried out by the Consumer and Marketing Service. The major objectives of the Service are to protect the animal and plant resources of the Nation, and to protect consumers from unwholesome meat and poultry products. These objectives are carried out under three major areas of activity as follows:

1. Meat and poultry inspection to assure that all meat and poultry and their products produced in plants shipping in interstate and foreign commerce are wholesome, and that foreign establishments producing these products for export to the United States meet Federal standards for sanitation and wholesomeness of products; and to provide technical and financial assistance to States to improve their meat and poultry inspection programs, or to perform those essential services within some States to assure the establishment and maintenance of equal wholesomeness and sanitation standards throughout the United States.
2. Animal and plant disease and pest control to prevent or minimize losses to American agriculture which may occur through the spread of domestic pests and diseases or the introduction of exotic diseases and pests. Survey, diagnostic and quarantine activities are carried out to control, eradicate, or prevent the introduction of animal and plant diseases and pests.
3. Regulatory activities, which are conducted under two major categories: (a) veterinary biologics, which involves the development of standards for, and the licensing and testing of veterinary biologicals to ensure their safety and effectiveness, carried out under the authority of the Virus-Serum-Toxin Act of March 4, 1913, and (b) animal welfare, which involves the inspection of certain establishments which handle animals intended for research and exhibition purposes, as defined by law, to insure their humane treatment.

The Service maintains central offices in the Washington metropolitan area. However, most of the Service's work is conducted at numerous field locations, meat and poultry plants, and at points of entry, in the fifty states, Puerto Rico, and the Virgin Islands. Much of the work is conducted in cooperation with State and local agencies, private groups, and foreign governments.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

Item	1972		Estimated, 1973		Estimated, 1974	
	Amount	Man-Years	Amount	Man-Years	Amount	Man-Years
Animal and Plant Health Inspection Service:						
Appropriation	a/ \$251,103,268	13,741	b/ \$289,052,000	14,141	b/ \$336,171,000	15,031
Obligations under other USDA appropriations:						
Agricultural Research Service						
Provide operational supervision for boll weevil field eradication trials.....	197,800	12	125,000	8	125,000	8
Develop mass rearing procedures and perform field evaluations in the gypsy moth research program..	274,053	3	320,000	3	320,000	3
Miscellaneous activities	12,443	- -	23,300	- -	23,300	- -
Total, Other USDA Appropriations	484,296	15	468,300	11	468,300	11
Total, Agricultural Appropriation Bill	251,587,564	13,756	289,520,300	14,152	336,639,300	15,042
Other Funds:						
Agency for International Development:						
Training of foreign nationals	9,878	1	18,700	1	10,700	1
Technical consultation and support..	4,973	- -	6,700	- -	6,700	- -
Special projects	89,795	3	84,800	3	69,600	2
Total, Agency for International Development	104,646	4	110,200	4	87,000	3
Technical services as follows:						
Department of Defense:	18,000	- -	18,000	- -	18,000	- -
Environmental Protection Agency ..	229,988	20	275,000	20	275,000	20
Import-export, inspection, laboratory testing, control and eradication services, etc.....	2,283,617	24	2,773,000	44	2,773,000	44
Overtime reimbursements from:						
Packers & processors for meat and poultry inspection	19,994,490	297	23,969,000	321	23,969,000	321
States for meat and poultry inspection..	130,246	6	221,000	11	221,000	11
Other agencies for meat and poultry inspection	521,831	41	10,000	- -	10,000	- -
Proceeds from the sale of animals, equipment, motor vehicles etc.....	87,855	- -	90,000	- -	90,000	- -

(Continued on next page)

Item	1972		Estimated, 1973		Estimated, 1974	
	Amount	Man-Years	Amount	Man-Years	Amount	Man-Years
Miscellaneous services, supplies and travel	42,062:	3:	49,000:	3:	49,000	3
Funds derived from States:						
local organizations and						
others for:						
Inspection, certification, and quarantine of animal						
products	444,241:	55:	644,000:	56:	644,000	56
Feed and attendants for animals in quarantine ..	261,136:	13:	175,000:	10:	175,000	10
Miscellaneous contributed funds under cooperative agreements	763,645:	13:	840,000:	15:	840,000	15
Total, Other Funds	24,881,757:	476:	29,174,200:	484:	29,151,000	484
Total, Animal and Plant Health Inspection Service	276,469,321:	14,232:	318,694,500:	14,636:	365,790,300	15,526

a/ Includes amounts for activities transferred to APHIS from other Department agencies during the fiscal year.

b/ Includes \$19,000,000 in fiscal year 1973 and \$49,000,000 in fiscal year 1974 for repayment with interest to the Commodity Credit Corporation of funds advanced to combat serious outbreaks of diseases which threatened the well-being of the American agricultural and livestock industries under the emergency authority of the Secretary. The amounts obligated, exclusive of interest payments to CCC, under the emergency authority were as follows:

	1972	1973
Exotic Newcastle Disease	\$12,500,000	\$28,000,000
Venezuelan Equine Encephalomyelitis	18,000,000	- -
Hog Cholera	- -	5,700,000
Total	<u>30,500,000</u>	<u>33,700,000</u>

(a) Animal and Plant Health Inspection Service

Appropriation Act, 1973	\$289,304,000
Budget Estimate, 1974	<u>336,171,000</u>
Increase in Appropriation	+46,867,000

Adjustments:

Appropriation Act, 1973	\$289,304,000
Transfer to General Services	
Administration for rental of space	<u>-252,000</u>
Adjusted base for 1973	289,052,000
Budget Estimate, 1974	<u>336,171,000</u>
Increase in appropriation	+47,119,000

SUMMARY OF INCREASES AND DECREASES
(On basis of adjusted appropriation)

	<u>1973</u> <u>Estimate</u>	<u>Program</u> <u>Changes</u>	<u>1974</u> <u>Estimate</u>
Meat and poultry inspection	\$160,709,600	+\$14,161,000	\$174,870,600
Screwworm eradication in Mexico	9,786,800	+6,384,000	16,170,800
Poultry diseases	581,600	+200,000	781,600
Repayment to Commodity Credit Corporation	19,000,000	+30,000,000	49,000,000
Imported fire ant	7,939,100	-1,000,000	6,939,100
Sweetpotato weevil	335,000	-335,000	- -
Soybean cyst nematode	528,000	-528,000	- -
European chafer	172,000	-172,000	- -
Phony peach and peach mosaic	211,000	-211,000	- -
Gypsy moth control	2,216,700	-500,000	1,716,700
Construction of facilities	880,000	-880,000	- -
All other	86,692,200	- -	86,692,200
Total available	<u>289,052,000</u>	<u>+47,119,000</u>	<u>336,171,000</u>

PROJECT STATEMENT
(On basis of adjusted appropriation)

Project	1972	1973 (estimated)	Increase or Decrease	1974 (estimated)
1. Meat and poultry inspection.....	\$150,563,657	\$160,709,600	+\$14,161,000 (1)	\$174,870,600
2. Plant disease and pest control:				
(a) Plant protection.....	25,592,285	26,757,200	-2,746,000	24,011,200
(b) Agricultural quarantine inspection.....	17,612,354	18,818,500	- -	18,818,500
Total, Plant disease and pest control.....	43,204,639	45,575,700	-2,746,000 (2)	42,829,700
3. Animal disease and pest control:				
(a) Animal health.....	52,616,431	75,937,100 <u>a/</u>	+36,584,000	112,521,100 <u>a/</u>
(b) Veterinary biologics..	3,091,109	4,449,600	- -	4,449,600
Total, Animal disease and pest control.....	55,707,540	80,386,700	+36,584,000 (3)	116,970,700
4. Construction of facilities.....	- -	880,000	-880,000 (4)	- -
5. Contingencies.....	<u>b/</u>	1,500,000	- -	1,500,000
Unobligated balance.....	1,627,432	- -	- -	- -
Total available or estimate.....	251,103,268	289,052,000	+47,119,000	336,171,000
Transfer to GSA.....	+21,451	+252,000		
Transfer to Cost of Living Council.....	+1,952,931	- -		
Total, appropriation.....	<u>253,077,650 c/</u>	<u>289,304,000 d/</u>		

a/ Includes \$19,000,000 in fiscal year 1973 and \$49,000,000 in fiscal year 1974 for repayment with interest to the Commodity Credit Corporation of funds advanced to combat serious outbreaks of diseases which threatened the well-being of American agricultural and livestock industries under the emergency authority of the Secretary. The amounts obligated, exclusive of interest payments to CCC, under the emergency authority were as follows:

	FY 1972	FY 1973
Exotic Newcastle Disease	\$12,500,000	\$28,000,000
Venezuelan Equine Encephalomyelitis	18,000,000	- -
Hog Cholera	- -	5,700,000
Total	<u>30,500,000</u>	<u>33,700,000</u>

b/ The amount appropriated for contingencies in fiscal year 1972 was \$1,500,000 of which \$1,401,635 was obligated during the fiscal year and is reflected within the amounts shown for the programs above. Details of contingency fund expenditures are shown on page 167.

c/ Includes amounts for activities transferred to APHIS from other Department agencies during the fiscal year.

d/ Of this amount, \$3,425,000 has been withheld from use in fiscal year 1973, principally from funds budgeted for travel and plant pest control programs.

- (1) An increase of \$14,161,000 for meat and poultry inspection activities.
(\$160,709,600 available in 1973).

Need for Increase: The funds requested for fiscal year 1974 are needed to meet the projected increase in workload for the meat and poultry inspection program.

The increase in the number of plants under Federal inspection results from a growing population and increasing consumer demand for meat and poultry products. Industry has expanded existing facilities and constructed new plants to handle the rising demand. In addition, as part of the overall Federal responsibility in this area, the Department is charged by law with designating those states which have not established or maintained an inspection system at least equal to the Federal system. Once a state has been so designated, all plants formerly inspected under the state inspection system become the responsibility of the Federal inspection system. Federal inspection continues until the state establishes an inspection system equal to the Federal system.

During fiscal year 1972, the Department operated programs in the States of Minnesota, Nebraska, Kentucky, and in Puerto Rico. These programs encompassed 580 plants and required the services of an additional 124 man-years. Program operating costs which were incurred in fiscal year 1972 could not be totally absorbed within available meat and poultry inspection funds. Absorption was accomplished only through the use of funds available for other Animal and Plant Health Inspection Service programs. Two hundred and thirty-nine man-years will be required in 1973 for these four programs.

During the first two months of fiscal year 1973 it became necessary to designate the States of Missouri, Oregon and Pennsylvania as states requiring Federal assumption of intrastate inspection responsibilities. Under these programs, the Department assumed responsibility for inspection of 903 plants which will require an additional 482 man-years this fiscal year.

Plan of Work: The establishment of the Federal inspection system entails the temporary detail of experienced Federal inspectors to oversee and implement the new system while recruitment and training of large numbers of new personnel proceeds. The recruitment effort must proceed rapidly to enable full staffing in the new locations and provide for return of employees detailed. People who meet entry requirements are in short supply. There are immediate training needs for new personnel brought onto the rolls. All of these items must be funded if program objectives are to be met.

The inspection of meat and poultry and their products is carried out by resident inspectors in slaughtering and processing plants. All livestock and poultry are inspected before and during slaughter to detect disease and symptoms of harmful pesticide, drug or biological residues and to prevent contamination of the carcasses during the slaughter operation.

Resident inspectors are also present during the further processing of meat and poultry products into food products destined for the consumers. Inspection is to determine that processing is done in a sanitary environment; and to detect and prevent spoilage and contamination, the use of harmful chemicals, adulteration with extenders; and to require truthful labeling.

As the inspection program expands, the workload of the support activities increases proportionately. Also, as increased public and congressional interest is placed on particular programs and as technology advances in particular areas, support staffs are required to keep pace and provide leadership and expertise to deal with changes and new problems. Specifically, as the number of plants under inspection increases, the number of labels, blue-

prints, and equipment requiring review and approval increases, and the volume of meat and poultry products requiring testing and analysis increases. The meat and poultry industries continue to be highly innovative in finding new ways to improve markets for their products. As the total industry modernizes its techniques for the production of meat and poultry products, inspection techniques and standards must be revised to assure optimum utilization of manpower and dollars.

A supplemental appropriation of \$12.1 million is proposed for 1973 to finance the costs of Federal assumption of inspection responsibilities in the States previously mentioned.

Meat & Poultry Inspection Workload

	1971 <u>Actual</u>	1972 <u>Actual</u>	1973 <u>Estimate</u>	1974 <u>Estimate</u>
Plants under Federal Inspection:				
Meat plants.....	2,974	3,282	4,310	4,510
Poultry plants.....	656	723	780	840
Meat & poultry plants.....	<u>693</u>	<u>869</u>	<u>1,050</u>	<u>1,200</u>
Total.....	4,323	4,874	6,140	6,550
Plants under State Inspection.....	<u>8,704</u>	<u>8,489</u>	<u>8,181</u>	<u>8,399</u>
Total.....	13,027	13,363	14,321	14,949
Million Pounds Inspected:				
Federal program.....	115,021	115,416(est)	120,364	121,977
State program.....	<u>10,135</u>	<u>10,215</u>	<u>9,274</u>	<u>9,552</u>
Total.....	125,156	125,631	129,638	131,529
Number of State Agreements				
Meat.....	46	44	41	41
Poultry.....	<u>34</u>	<u>34</u>	<u>33</u>	<u>33</u>
Total*.....	<u>80</u>	<u>78</u>	<u>74</u>	<u>74</u>

* Although Wyoming is certified equal to the Federal system in meat and poultry inspection, it has never signed an agreement for a cooperative program.

(c) A decrease of \$2,746,000 for Plant Protection consisting of:

(a) A decrease of \$1,000,000 in the imported fire ant program. (\$1,230,100 available in 1973).

The fiscal year 1972 appropriation placed \$2,000,000 of the fire ant funding in reserve, to be used for matching purposes with states which may come into the program. These funds were again placed in reserve in the 1973 appropriation. Based on past experience, the fire ant reserve may be safely reduced by \$1,000,000 to \$1,000,000 to be used as necessary if more states enter the program or if states presently in the program need to expand their efforts.

(b) A decrease of \$1,246,000 for the sweet potato weevil, soybean cyst nematode, European chafer and phony peach and peach mosaic programs (\$1,246,000 available in 1973).

With the development of resistant varieties, the use of sound agricultural production methods such as crop rotation, identical treatments for the control of other major pests and extremely low incidence of occurrence with

respect to the peach diseases, a point was reached in the control of these pests where the Department withdrew from these programs.

The \$1,246,000 appropriated for these programs in fiscal year 1973 has been placed in reserve and it is proposed that this amount be eliminated from the 1974 appropriation.

(c) A decrease of \$500,000 for the Gypsy Moth program (\$2,216,700 available in 1973).

These funds were appropriated in fiscal year 1973 but withheld from use. An integrated attack on the gypsy moth is conducted by the Department with five agencies sharing responsibility. The Extension Service carries out the Department's pest education program and the Cooperative State Research Service makes research funds available to states and institutions. New and more effective control methods are being sought through research and testing by the Agricultural Research Service and the Forest Service. APHIS and the Forest Service are cooperating in developing control methods to implement the results of the research effort and are carrying out survey, regulation and control measures against the pest. Current technology is a limiting factor on effectively expanding program operations. The present funding level will permit the continuation of effective detection and containment programs including the treatment of isolated infestations apart from the generally infested area.

- (3) A net increase of \$36,584,000 for Animal Health consisting of:
(a) An increase of \$6,384,000 to move the Screwworm barrier zone from the United States-Mexico border to the Isthmus of Tehuantepec.
(\$9,786,800 available in 1973).

Need for Increase: The present barrier zone against the spread of screwworm flies into the United States extends along the United States border from the Gulf of Mexico to the Pacific Ocean. Since the eradication of overwintering self-sustaining populations of this pest in 1964, the United States has experienced a minimal migration of screwworms from Mexico, usually averaging only about 1,000 cases per year. During the calendar year 1972, following an extremely mild winter in Northern Mexico and the Southwestern United States, screwworms appeared in ever-increasing numbers and by the end of the year over 95,000 cases were confirmed. The infested area included Texas, Oklahoma and parts of New Mexico, Arizona and California with additional spot outbreaks in Arkansas, Louisiana, Alabama, Georgia, Florida, Kansas and Iowa. The prevalence of screwworms over such a large area increased the chance of reinfestation in the Southeast where the fly can overwinter. Prior to initiation of the screwworm program, losses to the industry, nationwide, were estimated to be \$100 million annually.

We are proposing to lower the cost of keeping the screwworm out of the United States and to eliminate the possibility of serious outbreaks such as were experienced in 1972 by moving the barrier zone from its present northern Mexico-United States border area southward to the narrow Isthmus of Tehuantepec. Initial funding of \$2,000,000 for the United States-Mexico program was included in the 1973 Appropriation.

Plan of Work: Eradication of the screwworm in Mexico north of the Isthmus of Tehuantepec would be accomplished using sterile fly release technology. The funds would be used in FY 1974 to complete the conversion of surplus ships to a screwworm fly raising facility, to employ personnel, to secure and modify aircraft and to obtain material for media to raise the screwworm fly. The production and release of an estimated 300 million sterile screwworm flies per week will be underway in FY 1974. The program will be conducted in cooperation with the Mexican Government on an 80%-20% cost-sharing arrangement in support of the Joint Commission to be established for this program as set forth in the formal agreement signed on August 28, 1972.

- (b) A net increase of \$200,000 for the poultry program (\$581,600 available in 1973).
- (1) An increase of \$500,000 for surveillance of exotic Newcastle disease following eradication.

Need for Increase: It is anticipated that the present outbreak of exotic Newcastle disease will be eradicated in California during fiscal year 1973. A few isolated cases of exotic Newcastle disease may escape the eradication efforts, or an illegal importation may reintroduce infection. To prevent such instances from becoming another major outbreak it will be necessary to maintain an alert and competent surveillance for dealing with possible sporadic outbreaks after the current large scale effort has been phased out. The money would also be used for indemnities for any outbreak that may occur during this post eradication period.

Plan of Work: Sentinel birds will be placed on various premises in the area where outbreaks have occurred and at other high risk locations. Reference laboratory assistance will be given to State and private poultry diagnostic laboratories. All suspected cases of exotic Newcastle disease will be investigated by a poultry disease epidemiologist. Poultry producing areas along the Mexican border, especially formerly quarantined areas, will receive intensive surveillance.

- (2) A decrease of \$300,000 in the Salmonella program.

In all but a few of the rendering plants in the Salmonella program, either production of negative products and operation of self-monitoring programs are in effect or the sources of contamination have been identified and eliminated or are in the process of being eliminated. The Food and Drug Administration, with whom enforcement authority is vested, has been advised of those few plants not yet in the categories described above.

In view of the progress achieved in the Salmonella program, the 1974 Budget Estimates propose a decrease of the funds restored by the Congress in the 1973 appropriation for Salmonella inspection activities. The Service will, however, maintain staff activity in the general area of Salmonella and continue to provide Salmonella serotyping support to State animal disease diagnostic laboratories.

- (c) A net increase of \$30,000 for repayment to the Commodity Credit Corporation of advances (and interest thereon) for the following emergency outbreaks:
- (1) An increase of \$43,000,000 for repayment to the Commodity Credit Corporation of advances made to eradicate an emergency outbreak of exotic Newcastle disease. (No funds available in 1973).

On March 14, 1972, the Secretary of Agriculture declared a national emergency because of the outbreak and spread of exotic Newcastle disease in southern California. The action was taken to safeguard the nation's \$5 billion poultry industry and to protect the American consumer from seriously increased prices for poultry products which would have resulted if this disease were allowed to spread throughout the nation. The declaration authorized the transfer of funds from other appropriations available to the Department, as necessary, to control and eradicate the disease. This was in accordance with authorities contained in the provisions of the appropriation item for the Agricultural Research Service in Title 1 of the Agriculture-Environmental and Consumer Protection Appropriation Act, 1972, (Public Law 92-73; 85 Stat. 185) under the heading "Plant and Animal Disease and Pest Control", and Section 11 of the Act of May 29, 1884, 23 Stat. 32, as amended (21 U.S.C. 114a).

- (2) An increase of \$6,000,000 for repayment to the Commodity Credit Corporation of advances made to combat the spread of Hog Cholera. (Appropriated funds available for hog cholera program in 1973 are \$5,599,300).

On October 11, 1972, the Secretary of Agriculture declared a national emergency because of the rapid spread of hog cholera, the threat of further spread into states free of the disease, and to protect the investment made in past years to eliminate hog cholera in many areas. The declaration authorized the transfer of funds from other appropriations available to the Department, as necessary, to control and eradicate the disease. This was in accordance with authorities contained in the provisions of the appropriation item for the Animal and Plant Health Inspection Service in the Agriculture-Environmental and Consumer Protection program, Appropriation Act, 1973 (Public Law 92-399) and Section 11 of the Act of May 29, 1984, 23 Stat. 32, as amended (21 U.S.C. 114a).

- (3) A decrease of \$19,000,000 to eliminate a nonrecurring item provided in the 1973 Appropriation Act for repayment to the Commodity Credit Corporation of advances (and interest thereon) made during fiscal year 1972 to combat an emergency outbreak of Venezuelan Equine Encephalomyelitis.
- (4) A decrease of \$880,000 to eliminate nonrecurring items provided in the 1973 Appropriation Act for planning the Fleming Key Animal Import Center (\$300,000) and a Veterinary Biologics Facility (\$580,000).

STATUS OF PROGRAM

The Animal and Plant Health Inspection Service was established on April 2, 1972, pursuant to the authority of the Reorganization Plan No. 2 of 1953. The programs of the Service were formerly conducted by the Animal and Plant Health Service and the Consumer and Marketing Service. The Service carries out the Department's responsibility to insure for consumers a wholesome supply of meat and poultry and to protect the nation's sources of food, feed and other farm products from diseases and pests.

Federal inspection is provided for all meat and poultry products moving in interstate and foreign commerce. Labels are examined to insure that they correctly identify the product. In addition, Federal inspection of meat and poultry products is provided where the States are unable or unwilling to establish and maintain an inspection system at least equal to the Federal. In other States financial and technical assistance is furnished to State governments to aid in the operation of intrastate inspection programs which are at least equal to the Federal program.

Cooperative programs are conducted with State and local agencies and organizations to control, eradicate and prevent the movement of plant and animal diseases and pests. Inspection and regulatory programs are conducted to prevent introduction into the United States of pests and diseases of foreign origin and to prevent the spread of those within the country. Under the Virus-Serum-Toxin Act, activities are conducted to prevent the production and interstate distribution of worthless, contaminated, dangerous, and harmful veterinary biologics. Under authority of the Animal Welfare and Horse Protection Acts, activities are conducted to prevent the sale or use of animals which have been stolen, to insure that certain animals intended for use in research or for exhibition purposes are provided humane care and treatment, and to prevent the interstate movement and exhibition of horses which have been "sored".

MEAT AND POULTRY INSPECTION

Current Activities: The Federal Meat and Poultry Inspection Program is designed to insure the consumer that meat and poultry products are wholesome, unadulterated, and properly labeled. This goal is attained through direct Federal inspection of meat and poultry products in interstate and foreign commerce, cooperative agreements with States, and direct Federal inspection of products in intrastate commerce in those States where a cooperative agreement is not possible. Major direct Federal activities include:

1. Inspection of animals and poultry before and during slaughter.
2. Inspection of meat and poultry products and their processing to insure sanitary conditions.
3. Inspection of imported meat and poultry products.
4. Approval of labels, and insurance that processing is in accordance with the conditions of approval.
5. Inspection of meat and poultry for the presence of harmful pesticides and other chemical or biological residues.
6. On-site reviews of foreign inspection systems and plants exporting to the United States.
7. Certification of United States meat and poultry products for export.
8. Supervision of the destruction for food purposes of condemned and other inedible meat and poultry.

9. Regulation of related industries, including animal food manufacturers, brokers, shippers, and wholesalers; and dealers in dead, dying, diseased and disabled animals and poultry; to prevent their serving as a loophole through which uninspected or adulterated meat and/or poultry products could enter human food channels.
10. Providing analytical and consultative services in support of the national meat and poultry inspection program and to State and other Federal agencies in the field of chemistry, microbiology, pathology, parasitology, toxicology, and epidemiology.
11. Approval of plant facilities and equipment.

Major cooperative Federal-State activities include providing financial, technical, and training assistance to States to aid in the operation of inspection programs which are at least equal to the Federal system. Other cooperative efforts are designed to promote the most efficient use of Federal and State personnel.

Selected Examples of Recent Progress:

1. Plants under Federal Inspection:

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u> <u>Estimate</u>
Establishments Under Federal inspection as of June 30:							
Meat.....	1,973	2,860	3,178	3,330	3,667	4,151	5,360
Poultry.....	950	917	955	1,091	1,349	1,592	1,830

The large increase in numbers of plants inspected is due not only to increasing consumption of meat and poultry and their products, but also to the effects of the Wholesome Meat Act of 1967 and the Wholesome Poultry Products Act of 1968. The large increase estimated for FY 73 is due to the Federal assumption of the Pennsylvania and Missouri State programs in mid 1972.

Planned compliance reviews were begun in January 1972. The nucleus of a designed "In-plant Compliance Group" reviewed 367 federally inspected plants to begin a program expected to provide headquarters personnel with data for an ongoing evaluation of program effectiveness.

2. Federal-State Cooperative Program:

By law, all meat and poultry produced, except that from exempted establishments, is required to be inspected by the Federal system or a State system at least equal to the Federal.

As of June 30, 1972, 45 States were certified as having meat inspection programs at least equal to the Federal program. There were approximately 17,760 meat plants in the 45 States. In FY 1972, 9.0 million pounds of meat and meat products were inspected in States operating under the State-Federal cooperative program. North Dakota, Minnesota, Montana, Nebraska, Puerto Rico, the Virgin Islands, Guam, Kentucky, Pennsylvania, Oregon, and Missouri have not been able to acquire and maintain an equal to status, and the meat inspection responsibility has been assumed by the Federal system.

As of June 30, 1972, 34 States were certified as having poultry inspection programs at least equal to Federal programs. In Fiscal 1972, there were approximately 779 poultry plants in the 34 States. During FY 1972, 1.2 million pounds of poultry and poultry products were inspected under the State-Federal cooperative program. The States where the Federal system has had to assume the poultry inspection responsibility are Arkansas, Colorado, Georgia, Idaho,

Kentucky, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Oregon, Pennsylvania, South Dakota, Utah, West Virginia, Puerto Rico, the Virgin Islands and Guam.

Approximately 252 meat and poultry slaughter and processing plants have Federal inspection under 41 cooperative agreements (27 for meat inspection, 14 for poultry inspection) which permit the use of State employees through authority of the Talmadge-Aiken Act.

Cooperative agreements in the regulation of related industries were entered into with 12 additional States, bringing the June 30, 1972, total to 32.

Other agreements with States permit the interchange of employees (5 States), and the cross-utilization of employees (21 States plus the Virgin Islands). Cooperative laboratory agreements were established with two States, Kentucky and California; the possibility of others will be explored in the future.

The States have made good progress since the enactment of the Wholesome Meat Act and the Wholesome Poultry Products Act. In 1967, when the Meat Act was passed, only 28 States had mandatory intrastate inspection systems. Twelve States had voluntary inspection; but of the 40 States that made any provision for meat inspection, six did not provide processing inspection. Ten States, the District of Columbia, and Puerto Rico had no coverage of meat inspection except "after the fact" condemnation under public health laws which would not prevent unwholesome products from entering the food supply. In 1968, at the time the Wholesome Poultry Products Act was passed, 12 States had laws providing for the mandatory inspection of poultry, but only four reported active inspection systems. In addition, five States had voluntary poultry inspection programs.

This massive upgrading of State inspection in a relatively short period of time is due largely to the fine efforts put forth by the States. Also, extensive technical assistance offered by the Department has helped. Over 29 million dollars in grants for meat and poultry inspection was provided to the States in 1972. Interchange agreements were in effect in several States bringing Federal personnel into the State systems as advisors, and in some cases, as program directors. In addition, the Federal system provided training for many State employees in basic inspection, laboratory techniques, use of automatic data processing systems, program review and compliance work, label and packaging review, and facilities and equipment review. During FY 1972, Federal reviewers conducted over 12,000 in-plant reviews of State plants to determine if State programs were being maintained equal to the Federal meat and poultry inspection programs. Plants in which inspection problems were identified were resurveyed in an effort to assist the States in bringing the plants up to compliance standards.

3. Laboratory Procedures:

The Department's laboratories provide for the analysis, identification, and monitoring of chemical and biological substances in meat and poultry. Ingredients in processed foods, curing agents, bacterial levels, heavy metals, pesticide residues, growth inducing hormones, and antibiotics are monitored to control their entry into the food supply. The workload is constantly increasing as new or improved additives are introduced into foods by feed manufacturers, livestock producers, handlers and processors.

A sampling plan was designed and subsequently implemented for the increased tissue sampling of diethylstilbestrol (DES) in excess of the number collected in previous years. This program was enhanced by the use of new sophisticated equipment sensitive enough to permit detection of DES in amounts of less than one part per billion in animal tissues. As a result, approximately 6,100 samples were analyzed for the presence of DES residues during fiscal year 1972.

An extensive surveillance program for polychlorinated biphenyls (PCB) was necessitated by the distribution of large amounts of PCB contaminated poultry feeds. PCB is persistent in the environment and accumulates in the fatty tissue of animals and humans. While the effects of PCB on humans are not known for certain, there is evidence that they can cause infertility, skin disease and liver damage.

Over 7,000 lots of poultry were sampled and analyzed to prevent PCB contaminated products from entering human food channels. Workload was so heavy in this instance, that MPIP laboratories were unable to handle the analysis of all samples, and analytical assistance was obtained from the Environmental Protection Agency.

The increasing complexity of the problems generated by the finding of residues in meat and poultry products has resulted in the establishment of a Residue Evaluation and Planning Staff. The total effect of having a coordinated and centralized Staff, and of new approaches, such as computer programming to allow scheduling of samples, will be maximum output of analytical results and a more efficient residue analysis program.

Laboratory Analysis of Meat and Poultry
Products and Ingredients

<u>Type of Analysis</u>	<u>Number of Samples Analyzed</u>	
	<u>FY 1971</u>	<u>FY 1972</u>
Chemical		
Meat and Poultry Products	86,534	82,525
Non-Meat Ingredients	46,256	38,568
Biological Residues		
Antibiotics	1,461	2,539
Chemicals	22,424	28,191
Microbiological	5,087	6,114
Pathological	3,147	3,654
Epidemiological	221	423
Serological	<u>1,457</u>	<u>809</u>
	166,587	162,823

<u>Types of Testing</u>	<u>No. of tests</u>
Microbiologic	29,481
Chemical	613,794
Pathologic	3,654 <u>1/</u>

1/ Each case may consist of from one to twenty tissues, all of which are examined.

4. Carcasses Infected with Tuberculosis:

To provide added consumer protection, meat regulations concerning disposition of carcasses infected with tuberculosis were strengthened. The Department adopted recommendations of committees composed of USDA and public health officials and implemented these regulatory changes February 14, 1972.

As a result, approximately 80,000 swine carcasses and 2,000 cattle carcasses previously passed without restriction, will have to be cooked at a temperature of 170° F. for ½ hour to insure a safe, wholesome product for human consumption. This will require increased inspector supervision.

5. Poultry Basting:

Prebasted turkeys are gaining consumer preference. Existing regulations limit the amount of basting material, with no more permitted than is necessary for the basting effect. In 1972, the Department completed an operational survey and established control procedures to insure compliance.

6. Nutritional Labeling:

Nutritional labeling requirements have caused the Department to take measures to insure that meat and poultry products labeled with nutritional claims meet minimum requirements. This is especially true for those items meant for type A school lunches. Control procedures to insure the accuracy of the claims must be approved before the item may be produced.

7. Allied Industries:

During fiscal year 1972, there were 28,844 reviews of the operations of "related" industries, such as wholesalers, shippers, warehouses, and animal food manufacturers. A total of 685 violations of the meat and poultry inspection acts were noted, and 9,051,775 pounds of products were detained in 700 actions. Detained product is (1) rendered suitable, (2) voluntarily destroyed by the owner, or (3) seized for disposition by a Federal Court.

8. Reorganization:

The Meat and Poultry Inspection Program was reorganized during FY 1972 to increase the in-plant inspection responsibility and first line supervision, to provide more uniform inspection, and to increase Federal-State cooperation and coordination. Under this plan, the program is divided into two sections. Field Operations directs the actual in-plant inspection, the foreign review operations, the training facilities, and the compliance and review activities. Scientific and Technical Services is responsible for providing analytical, technical, and statistical support to the Meat and Poultry Inspection Program. This involves providing microbiologic, chemical, and pathologic analyses, instructions, methods, procedures, and standards for inspection. Also, included in the analytical aspects are residue evaluation and epidemiology surveillance. Technical Services is associated with the development of standards, regulations, procedures, and instructions applying to (1) the varied and complex processing procedures involved in producing meat and poultry products; (2) plant facilities, and equipment used in the industry; (3) informative labeling; and (4) inspection methods. Statistical Services are associated with developing sound statistical based programs and systems in the various complexed and sophisticated program areas within the Meat and Poultry Inspection Program.

9. Inspection of Foreign Products:

During Fiscal Year 1972, there was a significant increase in both the quality and quantity of inspection surveillance over foreign meat and poultry inspection systems which export products to the United States. Three additional veterinary review officers were assigned overseas to supplement the five already stationed in foreign countries. There are now review officers stationed in Australia, New Zealand, Denmark, Austria, Argentina, Germany and the Netherlands. In addition, 11 review officers are based in the U.S. and travel overseas as needed.

Due in part to this increase in staff, it was possible to increase the frequency of foreign plant review. Essentially, reviews of large volume plants exporting to the United States were increased to four a year, and reviews of other plants increased from one to two annually. During Fiscal Year 1972, 2,770 in-depth reviews of foreign plants were conducted, and 226 plants were determined to be substandard and ineligible

to ship to the U.S. However, the total number of foreign plants eligible to export to the United States increased during FY 1972 from 1,020 to 1,059. A specialized week long training course for import inspectors, who perform the sampling and inspection of the imported product once it reaches the U.S., was set up in 1972, and over 150 inspectors were trained in these procedures. Testing and analyses of imported products was increased to a point where it is comparable to the level applied to domestic products.

10. Training of Meat and Poultry Inspectors:

Methods and materials have been developed and many short training center courses and on-the-job courses, particularly for supervisors, are being implemented. These include basic courses and training courses updating the qualifications of experienced personnel. A performance audit is part of this system. During FY 1972, a total of 2,913 employees of Federal, State and foreign governments were trained. Of these, 2,161 were trained at the 4 meat and poultry training centers and Ohio State University. The remaining 752 were trained at field locations in the regions. A total of 2,010 Federal employees, 899 State employees and 4 foreign veterinarians were trained.

ACTIVITIES UNDER THE POULTRY PRODUCTS INSPECTION ACT
Fiscal Years 1971 - 1973

	<u>1971</u>	<u>Actual 1972</u>	<u>Estimated 1973</u>
Poultry Inspected:			
Slaughter:			
Million head.....	3,060	3,203	3,310
Million pounds-carcass weight....	9,815	10,332	10,680
Processing (million pounds):			
Product weight.....	16,501	18,307	20,720
Plants under Inspection:			
Slaughter.....	257	249	255
Processing.....	887	1,100	1,325
Combination.....	205	243	250
Total.....	<u>1,349</u>	<u>1,592</u>	<u>1,830</u>

MEAT INSPECTION ACTIVITIES
Animals and Carcasses Inspected (by species)
(in thousands)

	Fiscal Year		
	Actual 1970	Actual 1971	Estimated 1972
<u>Inspection of animals:</u>			
<u>Antemortem inspection:</u>			
Cattle.....	30,907	31,154	31,854
Calves.....	3,302	2,967	2,605
Sheep and Lambs.....	10,001	10,154	10,086
Goats.....	274	426	226
Swine.....	73,733	85,777	83,215
*Horses and Mules.....	56	57	73
Total.....	118,273	130,535	128,059
<u>Postmortem inspection (carcasses):</u>			
Cattle.....	30,894	31,144	31,843
Calves.....	3,284	2,955	2,594
Sheep and Lambs.....	9,987	10,142	10,075
Goats.....	273	424	226
Swine.....	73,658	85,698	83,126
*Horses and Mules.....	56	57	73
Total.....	118,152	130,420	127,937

*Horses and mules are slaughtered and their meat is identified as such and handled and prepared in separate establishments from those handling cattle, calves, sheep, swine and goats.

Animals and Carcasses Passed and Condemned
(in thousands)

	Fiscal Year		
	Actual 1970	Actual 1971	Estimated 1972
<u>Antemortem inspection:</u>			
Animals passed.....	117,965	130,179	127,770
Animals suspected.....	191	243	171
Animals condemned.....	117	113	118
Total animals inspected.....	118,273	130,535	128,059
<u>Postmortem inspection:</u>			
<u>Carcasses passed for food purposes:</u>			
Entire carcass.....	103,480	118,135	116,672
After removal and condemnation of portions of carcass affected with various diseases and conditions.....	14,360	12,017	11,000
Subtotal.....	117,840	130,152	127,672
Carcasses condemned and destroyed for food purposes.....	311	268	265
Total carcasses inspected.....	118,151	130,420	127,937
<u>Inspection of animals:</u>			
Postmortem inspected, total.....	118,151	130,420	127,937
Antemortem condemned, total.....	117	113	118
Died in pens.....	4	2	4
Suspects released.....	-	-	-
Total.....	118,272	130,535	128,059

Meat and Meat Food Products Prepared and Processed Under
Supervision Classified by Type of Product
(in thousand pounds)

	FY 1970	FY 1971	FY 1972
Placed in cure:			
Beef.....	232,783	247,775	239,124
Pork.....	3,546,799	4,196,472	4,089,016
Other.....	13,815	15,231	15,213
Smoked and/or dried - Cooked meat:			
Beef.....	139,082	149,359	159,718
Pork.....	3,029,987	3,621,375	3,500,210
Other.....	70,012	67,418	73,822
Sausage:			
Fresh finished.....	462,562	650,999	701,565
To be dried or semi-dried.....	179,310	199,959	208,824
Frankfurters, weiners.....	1,061,788	1,215,838	1,240,940
Other.....	1,212,605	1,348,537	1,426,994
Loaf, headcheese, chile con carne.....	267,714	291,348	266,797
Steaks, chops, roasts.....	5,537,016	6,836,863	7,453,140
Sliced bacon.....	1,309,941	1,548,241	1,519,943
Sliced other.....	715,258	780,674	840,943
Hamburger.....	262,278	341,914	379,828
Miscellaneous meat products.....	935,284	1,032,894	1,185,438
Frozen food - dinners, meat pies, etc.	976,835	1,086,669	1,248,205
Lard:			
Rendered.....	1,583,831	1,800,372	1,546,491
Refined.....	993,902	1,159,143	1,182,748
Edible tallow.....	673,429	778,720	862,431
Pork Fat:			
Rendered.....	83,658	99,463	92,651
Refined.....	26,567	40,607	56,878
Compound containing animal fat.....	911,953	1,108,128	1,092,343
Oleomargarine containing animal fat.....	88,471	197,872	215,042
Canned products.....	3,230,854	3,459,135	3,397,750
Horse meat products.....	14,466	12,844	13,564
Total a/.....	27,560,200	32,287,850	33,009,618
Boning:			
Beef boning.....	4,249,691	4,308,742	4,237,976
Pork cut.....	12,319,174	15,099,906	14,457,004
Other boning.....	753,650	840,298	725,958
Total b/.....	17,322,515	20,248,946	19,420,938
GRAND TOTAL.....	44,882,715	52,536,796	52,430,556

a/ Some products may have been inspected and recorded in this table more than once due to their having been subjected to more than one processing treatment, such as curing, smoking, and slicing.

b/ Represents total weight of animals slaughtered used for boning and processing into meat food products under inspection.

Foreign Meat and Meat Food Products Passed for Entry,
Refused Entry and/or Condemned
(thousands of pounds)

Fiscal Year 1972 Estimate

	<u>Passed</u>	<u>Refused</u>
Argentina.....	101,922	2,591
Australia.....	504,328	11,682
Austria.....	12	- -
Belgium.....	60	- -
Brazil.....	45,492	1,267
Bulgaria.....	722	- -
Canada.....	140,939	1,658
Columbia.....	104	6
Costa Rica.....	42,285	350
Czechoslovakia.....	1,216	1
Denmark.....	135,998	1,057
Dominican Republic.....	9,935	346
El Salvador.....	959	- -
England and Wales.....	296	2
France.....	200	6
Germany.....	1,208	60
Guatemala.....	29,988	311
Haiti.....	2,089	40
Holland.....	65,992	2,331
Honduras.....	30,532	242
Hungary.....	5,197	1
Iceland.....	1	- -
Ireland.....	38,461	426
Italy.....	191	- -
Japan.....	6	- -
Mexico.....	56,933	864
New Zealand.....	241,563	5,426
Nicaragua.....	52,891	360
Northern Ireland.....	1,716	12
Panama.....	2,548	21
Paraguay.....	8,216	104
Poland.....	35,562	82
Rumania.....	1,284	1
Scotland.....	1	- -
Spain.....	74	1
Sweden.....	49	- -
Switzerland.....	91	- -
Yugoslavia.....	<u>10,471</u>	<u>464</u>
Total.....	<u>1,569,532</u>	<u>29,712</u>

PLANT DISEASE AND PEST CONTROL

Current activities: The Department cooperates with State and local agencies, the Republic of Mexico, Canada, and other Western Hemisphere countries in order to protect our Nation's farm crops from insects, nematodes and diseases. Surveys are conducted to detect harmful pests and diseases. Efforts are focused on preventing interstate spread of harmful pests and diseases. The effects of the use of pesticides on the environment are closely checked.

An inspection program is conducted at ports of entry to prevent the entrance of insects, nematodes and diseases which are harmful to the plant life of this Nation. The Department also certifies plants and plant products for export.

Selected Examples of Recent Progress:

Plant Protection

1. Imported Fire Ant. Imported fire ant treatments were continued in those areas where the ant is causing trouble and where there is State and/or local financial interest in a cooperative control program. During the calendar year, 18,688,000 acres were treated in eight of the nine infested States.

The Environmental Protection Agency approved new labels for the uses of mirex to minimize environmental contamination. The major change was the exclusion of coastal counties or parishes from aerial treatments with mirex baits.

Beginning with the spring program, a statistically designed monitoring program was initiated to monitor the efficacy of the imported fire ant treatment and accumulate residue data on animals, food, soil, and water throughout the entire area under treatment. This program has been reviewed and approved by EPA. It is believed that monitoring data obtained from this program will provide information that will make possible the wider use of mirex treatments.

In addition, the application of a new mirex bait formulation which reduces the total amount of chemical applied approximately 73 percent is being evaluated. Preliminary results show the new formulation to be as effective as the standard formulation.

2. Pink Bollworm. Large-scale testing of the sterility control technique to combat the pink bollworm in the San Joaquin Valley of California continues to be promising. Only 12 adults and no larvae were found in 1971. Since 1968, the releases of sterile males have been increased to provide for adequate overflooding of the areas where moths or larvae were found. The lure trapping program to monitor the areas previously found infested and to detect possible incipient infestations was accelerated in June of 1972. As of November 9, 1972, when the sterile releases were completed, the total native moths trapped by county was Kern 31 and Tulare 4. Limited boll examinations were made at three of the most highly suspect sites. No larvae were found.

In order to provide for increased moth production needed to cover the area where moths have been found and provide for an unforeseen emergency, the Phoenix rearing facility was expanded and improved to bring the production capacity to 1,250,000 moths per day. Approximately 100 million sterile moths were released in the San Joaquin Valley in 1972.

Regulatory inspections continue in Mexico and the South-central United States to prevent spread and establishment of the pink bollworm to those areas not now infested in the Central and Eastern United States.

In addition to the work in California, surveys are made in Arkansas, Louisiana, Mississippi, Missouri, and eastern Texas for early detection of any moths moving eastward to the noninfested States.

An analysis of the 3-year sterile moth release trial in the wild cotton area of the Florida Keys indicated that good population suppression was being achieved with the sterile insects. On November 13, 1972, the sterile technique was substituted for the destruction of wild cotton in Florida. A total of 2,400,000 sterile moths are released weekly. The effectiveness of the program is being monitored with trapping surveys.

3. Gypsy Moth. Natural spread of the pest continues on a broad front. An expanded detection survey was conducted in noninfested areas. Disparlure baited traps placed in biometrically designed grid arrays were used in 17 States. This was supplemented by selected trapping in 34 States on suspect introduction sites. About 120,000 traps were involved in this effort. During 1972, male moths were caught in 55 new counties in eleven States, including for the first time Iowa, Tennessee and West Virginia. While cooperative control treatments have helped to prevent establishment of the gypsy moth at distant locations, active infestations have been found in Ohio and Michigan.

The few moths caught in North Carolina, South Carolina, Tennessee, Ohio, and Iowa again verify the significance of recreational vehicles in transporting one or more stages of the insect to distant points. In almost every instance, campgrounds, State parks, or similar resort locations are involved. Similar instances of hitchhiking insects were recorded in 1971. Federal and State personnel operate at some 58 rest areas on major highways extending north, south, and west from the regulated area to help prevent spread to locations beyond the generally infested area. During the summer, about 15,000 recreation vehicles were inspected with about 150 or 1 percent having infestations.

The New Jersey Department of Agriculture, under cooperative agreement with APHIS, is producing parasites for distribution to States where male moths were trapped last year. About 160,000 parasites have been distributed to seven States. Releases are made in areas where parasite alternate hosts are present.

Field tests in progress include the use of Disparlure, a sex attractant, as a control agent, evaluation of aerial application of Bacillus thuringiensis (Bt), screening chemical insecticides, control with sterile male moths, and studies to determine trap range and effectiveness.

4. Cereal Leaf Beetle. The spring survey ending June 30, 1972, revealed cereal leaf beetles for the first time in seven counties in Tennessee and three counties in Missouri. These counties border infestations in Kentucky and Illinois. The Missouri find is the first west of the Mississippi River. Illinois is generally but lightly infested with beetles found in all but 14 of the State's counties. Minor extensions of the infested areas were discovered in Michigan (one county in Upper Peninsula), New York, Kentucky, Maryland, Virginia, and West Virginia.

The release of parasites to suppress cereal leaf beetle populations continued. Attempts to produce large numbers of the larval parasites in the laboratory were not successful, however seventeen field rearing sites were established and "seeded" with larval parasites. The egg parasite reared in the laboratory has been released in infested fields with a good record of establishment and dispersal. Between April and June, 189 releases of the egg and larval parasites were made in 95 counties in eight infested States.

All of Illinois was placed under the Federal quarantine and the State quarantine was revoked. The Federal quarantine was not extended to the States of Missouri or Tennessee. Adequate regulatory action will be taken to prevent spread from the lightly infested areas in these two States.

5. Grasshopper and Mormon Cricket Control. A total of approximately 2,205,000 acres of rangeland was treated for grasshopper infestation with ULV malathion at 8 ounces per acre in six Western States and Oklahoma in calendar year 1972. (See Exhibit 1). Idaho and Oregon accounted for approximately 2 million acres. Control was generally good. Carbaryl was used on approximately 50,000 acres in Washington and Idaho. Final checks on the carbaryl acreage showed only about 75 percent reduction in populations in Washington. In Idaho, flight movement into the carbaryl treated area shortly after treatment prevented an accurate check of results. Tests will continue this season with new insecticides and pathogens.

Surveys for the detection of incipient outbreaks of Mormon crickets were continued, but no control work was required.

6. Citrus Blackfly. Eradication treatments have been underway in the Brownsville, Texas, area and Mexico border cities of Matamoros and Reynosa, State of Tamaulipas, since April 1971. In September 1972, infestation was found on four properties in the Los Fresnos locality and in October throughout the city of Mission. Trees on infested and adjacent properties are now being treated. About 10 individual properties at four locations in the city of Brownsville are still known to harbor infestation. Continuing infestation is also present north of Brownsville at the village of Olmito. Wherever possible, infested trees in abandoned areas are removed and burned.

In Matamoros and Reynosa, Tamaulipas, Republic of Mexico, initial eradication treatments on the citrus trees within the city are complete. In Reynosa, 53 properties and in Matamoros, 25 properties have been

found infested since completion of the treatments in August 1972. Retreatment of these infestations is in progress. An intensive biometrical survey was initiated in November 1972 to detect any additional infestations in the Texas-Mexico border area.

In order to hold the hazard of reinfestation to a minimum, road stations have been established at Padilla, Tamaulipas, and China, Nuevo Leon. In fiscal year 1972, more than 3 1/2 million parasites were colonized in Northeast Mexico. Selective spraying was done to reduce hotspot infestations in the former chemical control zone.

7. Boll Weevil Eradication Trials. The boll weevil eradication trial which was initiated in July 1971 was continued on approximately 19,000 acres of cotton in contiguous areas of Alabama, Louisiana, and Mississippi.

It was evident by mid-July that a low-level general infestation of boll weevils existed in the eradication area. Some fields were still free of boll weevils, but these were scattered throughout the area. An evaluation of the program indicated greater emphasis would be required for supplemental cleanup using ground application equipment around fields with obstacles such as high trees, power lines, buildings, etc.

Program procedures were modified to include this activity. By the end of August it was practically impossible to find live boll weevils in cotton in the test area. All standing cotton is being shredded to further insure against winter survival of the weevil. A combination of more intensive population suppression measures, normal development of the cotton crop, and intensive attention to detail in execution of the program has reduced boll weevil populations to extremely low levels. Our evaluation of the prospects for achieving the program objective to determine the technical feasibility of eradicating the boll weevil is optimistic at this time.

8. Pest Management. Twenty programs were initiated during the past year bringing to 22 the total number of cooperative pest management programs. Fourteen of these programs are on cotton, and the other eight are on alfalfa, apples, lettuce, potatoes, snapbeans, sweet corn, and sweet peppers. These additional programs represent an expanded interest in management of insect pests through use of crop scouting coupled with integrated control methods. (See Exhibit 2)

Growers participating in last year's cotton and tobacco programs were able to eliminate one or more pesticide applications. Information received from leaders of the new programs indicates that many growers are delaying or reducing the number of pesticide applications on the basis of the scouting information provided to them. Some of the obvious benefits are reduced cost of production, less environmental pollution, and better use of beneficial species in the fields.

A format has been prepared for use by all projects to be used in recording cultural, scouting, treatment, and environmental information. Farmer interest in this approach to pest control continues to increase. Also, the inquiries which have been received indicate that research, extension, and regulatory personnel in many of the States are interested in utilizing the program on other crops, including peanuts, grain sorghum, soybeans, citrus, and others.

9. West Indian Sugarcane Root Borer. Damage to citrus trees resulting from the larvae present in the soil was on the decline in 1972. Only 20 trees

required removal. This compares with approximately 1,600 trees which showed serious decline symptoms or mortality during the first 3 years of the program. Some spread of infestation occurred however. There are now 14,600 acres within the regulated area of which 6,196 acres are in citrus production. Adult West Indian sugarcane root borers have been detected in 238 groves comprising 2,146 acres since the beginning of the program. Surveys in 1972 were conducted within and outside the regulated area on a total of 18,614 acres. Adult borers were found on 1,466 acres. A total of 16 new properties was found infested.

All newly infested properties were treated with chlordane at 10 pounds per acre. Properties on which adult beetles were found and adjacent properties were treated with 2 pounds of Sevin 4 oil on a 14-day schedule. Foliage sprays were discontinued in November. A total of 2,744 acres received foliage sprays.

10. Witchweed. Eight counties have been released from quarantine during the last 2 years--four in North Carolina and four in South Carolina. Fewer acres are requiring suppressive herbicide spraying each year. The 241,095 aggregate acres treated in 1972 was the lowest total in the last 3 years. Prior to 1970, yearly treatments were at an approximate level of 525,000 aggregate acres. Surveys are now made to determine which fields require treatment. Presently, infestations occur on 14,148 farms in 21 counties in North Carolina and seven counties in South Carolina.

A herbicide layering machine, designed at the witchweed laboratory, is being field tested and evaluated. This machine is capable of putting a concentrated film of a herbicide under approximately 1 inch of soil. This technique shows a high potential for full season control with a single treatment.

11. Khapra Beetle. No established infestation of the khapra beetle has been found in the United States or Mexico since 1966. Consequently, the Department revoked the domestic quarantine on September 2, 1972. Since 1955, when the quarantine became effective, a determined effort by this Department and Mexico was made to eradicate this stored grain pest. This effort has been successful. Surveillance for this insect will be continued with a designed survey program and by inspection of imports at ports of entry to prevent new introductions.

During the calendar year to date, 475 inspections were made for khapra beetle in the United States, and 242 inspections were made in Mexico. (See Exhibit 3)

Agricultural Quarantine Inspection

1. The level of activities for agricultural quarantine inspection at ports of entry is as follows:

Plant and animal byproduct

import inspection:	<u>1972 Actual</u>	<u>1973 Estimate</u>	<u>1974 Estimate</u>
Airplanes (thousands)	315	325	340
Vessels (thousands)	71	75	80
Vehicles from Mexico (millions)	31	38	40
Baggage, pieces, including mandado (millions)	95	100	105
Mail packages (millions)	61	62	63
Interceptions (thousands):			
Unauthorized plant materials	641	650	665

	<u>1972 Actual</u>	<u>1973 Estimate</u>	<u>1974 Estimate</u>
Plant pests	41	44	46
Imported animal byproducts, pounds (millions)	575	600	700

2. Plant Pests of Quarantine Significance Frequently Intercepted. Most significant plant pests are intercepted with unauthorized plant materials or found hitchhiking aboard carriers or with general cargoes. Some of the more significant plant pests found include the following:

	<u>Number of lots containing pests intercepted FY 1972</u>
Black spot of citrus	660
Woodborers	614
Citrus canker	595
Oriental fruit fly	517
Japanese citrus scale	508
West Indian fruit fly	477
Sweet orange scab	469
Parlatoria scale	428
Mexican fruit fly	375
Rice diseases	310
Mediterranean fruit fly	226
Chestnut pests	167
Khapra beetle	151
European cherry fruit fly	129
Olive fruit fly	112
Pink bollworm	41
Avocado seed moth	39
Light brown apple moth complex	34
Citrus blackfly	31
Peach fruit moth	11

3. Increases in Inspection Workload. The entry of people and goods into the United States continued to increase in fiscal year 1972. Air passenger traffic increased by 1,200,000 people to a total of 16,826,000. An additional ten-thousand aircraft underwent inspection reflecting the increase in military as well as civilian aircraft arrival. Consolidation of plant and animal products inspection activities has eliminated some duplication of program effort. As a result, an additional 17,000 vessels were inspected in 1972, for a total of 70,794, without increasing the workforce. The number of vessels found with prohibited materials aboard increased by 10,000 over FY 1971.

Plant pests intercepted in wood-packing material and wood-products materials rose to 614 lots in 1972, an overall increase of 50 percent, resulting in a major increase in pest interceptions requiring quarantine action. Bark beetle interceptions increased from 83 lots in 1971 to 165 lots in FY 1972. Necessary quarantine actions were taken under the authority of the Federal Plant Pest Act.

4. Biometric Inspection Sampling Plan Implemented. A biometric sampling technique for random inspection of lots of fruits or vegetables for pests was developed and implemented during the year. Application of the new system was first applied during the inspection of this season's Australian, New Zealand, and Tasmanian apple and pear imports. Considerable saving in manhours of inspection time and better assurance of finding low level pest infestations are the advantages of the biometrically designed system.

5. Emphasis Shifts on Returning Military Cargo. There has been a decrease in the amount of military cargo being returned to the continental United States from Vietnam. The number of USDA Advisors in Vietnam who have been providing overall supervision in the cleaning and preparation of returning cargo has been reduced to one man. However, the Pacific Command requested that a USDA Advisor be sent to Okinawa to provide training and assistance in establishing a clearance program there. The inspector assigned to that location will also be available if needed in other Pacific Command areas.

By having Agriculture inspectors assigned in Vietnam as Advisors to the retrograde cargo preclearance program, thousands of tons of cargo have returned to the mainland free of potentially harmful pests.

6. Cold Treatment Procedures for Refrigerated Containers. Cold treatment to eradicate tropical fruit flies has been approved in 20-foot van containers that are shipped in refrigerated holds on vessels that supply air from central cold air ducts to cold treat the fruit. The first commercial shipments on three separate vessels arrived from Australia this season. The American public benefits by having a selection of fresh apples and pears. The United States is protected from pests that are eradicated while the fruit is in transit to this country.
7. Completion of Implementing Uniform Ship Boarding and Stores' Sealing Procedures and Development of Memorandums of Agreement. In conjunction with the uniform meat sealing procedures put into effect last year, new sealing guidelines for fruits and vegetables in ships' stores have been issued. Shipping companies have been informed of the new guidelines and have been given the opportunity to enter into an agreement with APHIS to the effect that they will not provision their vessels with prohibited items. By signing a Memorandum of Agreement, a company's designated vessels will not be boarded outside of regular hours for purposes of stores' inspection. Considerable government manhours have been saved and shipping lines have saved considerable reimbursable overtime charges by carrying only authorized products.

ANIMAL DISEASE AND PEST CONTROL

Current Activities: Nationwide programs are conducted to control and eradicate animal diseases. State and local agencies cooperate with the Department in protecting the livestock and poultry food-producing industries. Laws and regulations are administered to prevent the spread of diseases through interstate shipments of livestock and poultry and to insure the welfare and humane care of transported livestock. The welfare of certain laboratory animals, exhibition animals and horses is protected. Miscellaneous disease conditions are diagnosed, examined, and controlled, as required.

An inspection and quarantine program is carried out to prevent communicable animal diseases of foreign origin from gaining entrance to this country. Cooperative Agreements, aimed at preventing, controlling and eradicating any communicable disease of animals which threaten the livestock, poultry and related industries of the United States are being entered into with many Western Hemisphere nations. Under the Virus-Serum-Toxin Act, efforts are directed at preventing the production and interstate distribution of worthless or harmful veterinary biologics.

Selected Examples of Recent Progress:

Animal Health

1. Tuberculosis. Changes in the Meat and Poultry Inspection Program regulations now prohibit passing a tuberculin-reactor for food without cooking. This change in inspection procedure reduced the market value of tuberculin reactors to almost zero. To more equitably compensate the owner for the loss, Federal indemnity for tuberculin reactors (cattle) was changed from a maximum of \$25 for grade cattle and \$50 for purebred cattle to 90 percent of the difference between the appraised value and the salvage obtained by the owner. The indemnity is now limited to \$350 per animal or the appraised value minus salvage and State indemnity, whichever is less. In addition to increasing the Federal indemnity limits, restrictions requiring State-matching funds were removed. This change will relieve pressure on State funds and speed eradication of bovine tuberculosis, a disease which remains a threat to the cattle industry of the United States and the public health so long as it exists in this country. The increase in Federal tuberculosis indemnity rates will avoid losses by owners of tuberculin reactor cattle because of the new Meat and Poultry Inspection Regulations.

The indemnity increase is expected to encourage rapid location of tuberculosis infected cattle and rapid cleanup of infected herds. Thus, the time required to completely eradicate this dangerous disease is expected to be shortened.

2. Tick Program-Texas. The outbreak of cattle fever ticks that had previously been found outside the quarantined area, in Cameron County, Texas, was brought under control and it is believed that eradication has been completed. Cattle fever tick eradication activities in Texas resulted in the inspection of more than 1.6 million cattle and 55 infested premises being located. A total of 156 head of Mexican livestock was apprehended, of which 35 were tick infested.

There have been 33 infestations of cattle fever ticks reported in the 8 counties containing quarantined areas along the Rio Grande River between July 1 and December 31, 1972. This activity is comparable to the same period of time in the preceeding year.

A more serious outbreak of cattle fever ticks was discovered in an Alice, Texas, livestock market on August 22, 1972. A total of 63 infestations have been recorded in connection with this outbreak; 62 are in Texas and 1 is in Imperial County, California. The infestations in Texas extended to a county 300 miles northeast of Alice, another county 400 miles northwest of Alice, and another county 100 miles directly west of Alice. Parts of 6 counties in the Alice area have been placed under both State and Federal quarantine and a total of 85 State and Federal inspectors have been assigned to carry out inspection for movement, inspection to determine location of infested premises, and the tracing of movements from noninfested and exposed premises. The increased number of inspectors has made it necessary to employ temporary inspectors. The temporary inspectors require training and supervision which of necessity must be provided by inspectors from the quarantined area along the Rio Grande River.

One outbreak of acute bovine piroplasmiasis was confirmed in Cameron County, Texas in cattle on a pasture located adjacent to the Rio Grande River.

3. Hog Cholera. During FY 1972, 76 positive cases of hog cholera were reported. This represented an 82 percent reduction in incidence from the 418 positive cases reported in FY 1971.

Faced with massive hog cholera outbreaks during FY 1973 which seriously threatened the progress achieved in the program thus far, the Secretary of Agriculture, on October 11, 1972, declared the existence of a national emergency. During the first six months of FY 1973, ending with December 31, 1972, 146 positive cases have been reported involving 17 States and the Commonwealth of Puerto Rico. This represents an almost 100% increase over all outbreaks during FY 1972.

As a result of these outbreaks and subsequent spread of the disease, 6 States (Nebraska, Kentucky, Indiana, Ohio, Tennessee and Georgia) have lost their "hog cholera free" status. Additionally, the State of New Jersey has dropped from Phase 4 to Phase 3. (See Exhibit 4)

Concomitant with the Declaration of Emergency, regulations were amended to permit the Federal government to pay increased indemnities. Where isolated cases occur in "hog cholera free" States the Federal share will remain at 90 percent. In other than "free" States the Federal share will increase to 75 percent, contingent upon the States having an effective swine identification program which will permit tracing back of the infected animals to their herds of origin.

On December 1, 1972 the pickup of all hog cholera vaccine and seedstock virus from biological houses in the United States was completed, thereby eliminating a possible source of the virus.

Experience has shown that as the incidence of a disease decreases, interest and reporting also declines. This is an extremely dangerous combination where viral diseases such as hog cholera are concerned. To combat this problem specially trained diagnosticians in each State or group of States have been assigned responsibility for surveillance and investigation of hog cholera until eradication of the disease is complete.

Improperly cooked garbage is a serious source of hog cholera in some States particularly where a major portion of the swine are fed garbage. During 1972, improperly cooked garbage was the source of about 19% of confirmed hog cholera cases. A thorough search has been made to detect unknown garbage feeding operations in all States, and especially those where garbage feeding has been outlawed.

The disease is spread easily and rapidly by uncontrolled movement, thus making traceback difficult and time consuming. Regulations are strictly enforced concerning the marketing of feeder pigs in infected States. Full-time inspection will be provided at all feeder pig sales in 24 selected States.

4. Brucellosis Eradication. Five more States were certified as brucellosis free (Ohio, South Carolina, Indiana, Idaho, and Oregon) making a total of 28 certified free States plus the Virgin Islands. For a map depicting the current program, see Exhibit 5. See Exhibit 6 for a breakdown of Federal and cooperator costs by State.

Brucellosis surveillance under the market cattle identification program increased sharply during fiscal year 1972. The number of animals tested under this program increased to 7,266,150 as compared to 5,400,968 in fiscal year 1971, an increase of 34.5 percent. Conversely, the number of brucellosis infected herds decreased during fiscal year 1972 to 11,579. This represents a decrease from the fiscal year 1971 total of 14,812 infected herds or 21.8 percent.

5. Specialized Training. Accomplishments in technical and professional development during FY 1972 included 920 Federal employees attending technical, scientific, administrative, managerial, and supervisory training through in-service programs. One hundred and fifty-five State employees also received training through these programs. In addition, 106 military veterinarians, 286 officers and noncommissioned officers, 1,832 temporary employees (Federal), and 60 permanent Federal employees were trained at Riverside, California, for Newcastle Disease Task Force work.

6. Foreign Animal Diseases. For the first time in history African swine fever invaded the Western Hemisphere, appearing in Cuba in May of 1971. In August of 1971, Veterinary Services held a training course for veterinary scientists from El Salvador, Panama, Costa Rica, Nicaragua, Honduras, Guatemala, Mexico, and the United States in the differential diagnosis of African swine fever and the indigenous disease that it so closely resembles--hog cholera. As a result of this training, these scientists are better equipped to identify this highly fatal disease should it occur in their countries' swine industries.

In order to protect the livestock industry of the United States, bilateral agreements have been signed with Costa Rica, Nicaragua, British Honduras, and Panama establishing cooperative programs to prevent, control, and eradicate foot-and-mouth disease and rinderpest. Similar agreements with El Salvador, Guatemala, and Honduras are expected very shortly.

7. Venezuelan Equine Encephalomyelitis (VEE) Control. VEE Epidemic - FY 1972. Presence of VEE was confirmed in the southern part of Texas on July 9, 1971. Before the epidemic was brought under control, VEE virus was isolated in 75 herds of horses in 26 counties in Texas. The last case occurred on November 7, 1971, in Starr County, Texas. The epidemic was controlled by vaccination, vector control, and quarantine. A Federal fee-basis vaccination program resulted in the vaccination of 2.8 million horses in 19 States and the District of Columbia. Almost 13 million acres along the Gulf Coast and Rio Grande River in Texas and in 2 parishes in Louisiana were sprayed with ultra-low volume insecticide for control of mosquitoes. All Federal quarantines have been released. VEE emergency has been terminated as of November 30, 1972.
8. VEE Surveillance. The VEE surveillance program consists of three parts. The first and most essential part is prompt reporting and investigation of all suspicious equine encephalitic cases in the United States. The second part consists of serological sampling of certain wild mammals, domestic dogs, and other domestic livestock. This sampling is being conducted in a well-defined zone extending from California to South Carolina north of the known viral activity area in 1971. The third part of the program involves research and surveillance projects conducted by other agencies. These projects include insect trapping, effect of vaccination on pregnant mares and 1972 foals, and serological studies. Since the last case on November 7, 1971, surveillance activities have revealed no sign of VEE viral activity in the United States.
9. VEE Vaccination. An intensive informational campaign was launched through newspapers, magazines, radio and television networks, and public appearances to promote vaccination of all susceptible horses in the United States. Adequate vaccine is available from commercial sources and horses are now vaccinated at the owner's expense.

10. Exotic Newcastle Disease. In November of 1971 the existence of exotic Newcastle disease, a devastating disease of poultry, was confirmed in the Fontana area of southern California. The disease was apparently introduced initially through the importation of psittacine and mynah birds. However, the disease spread rapidly into the heavily populated poultry area of southern California and threatened the entire \$6 billion poultry industry of the United States. Faced with this situation, the Secretary of Agriculture on March 14, 1972, declared a national emergency which provided for an all-out effort to combat and eliminate this disease. Eight counties in southern California were at that time placed under State and Federal quarantine. A State-Federal Task Force was organized with headquarters established in Riverside, California.

The three-pronged eradication program consists of using quarantines to effectively prevent spread of the disease, a supervised vaccination program to protect healthy poultry and depopulation of infected flocks and those which may have been exposed to the disease, with indemnity payments for the birds destroyed.

Except for a few isolated outbreaks which were quickly eradicated, the disease has been contained within the 8 counties originally placed under a State and Federal quarantine in California. With the successful elimination of outbreaks, the quarantine area in California has been reduced to contain only portions of 3 counties which were originally placed under quarantine. The number of cases occurring in southern California has been greatly reduced.

11. Screwworm. The joint United States-Mexico eradication program moved forward with the signing by Secretary of Agriculture Earl L. Butz, and Mexican officials of the agreement on August 28, 1972.

With the extensive outbreak in Texas and the Southwest in 1972, over-all program progress has diminished. However, to combat these massive outbreaks the Mission sterile fly rearing facility has established new production records. For the last month of fiscal year 1972 and continuing into the new fiscal year, over 200 million flies have been raised and distributed per week. New methods and procedures were developed and implemented in order to raise and distribute this number of flies on a continuing basis.

12. Animal Welfare. Public Law 91-579, the Animal Welfare Act of 1970, which amended Public Law 89-544, the Laboratory Animal Welfare Act, required that regulations and standards be available for the expanded coverage effective December 24, 1971. This amendment provided that all warmblooded animals designated by the Secretary, which are used for purposes of research, or exhibition and those offered for sale by commercial animal dealers as pets would be included under humane care and handling standards. To assist the field force in implementing the provisions of the Act, 4 regional training courses were held, attended by 150 Veterinary Services personnel.
13. Horse Protection. A program was established, during fiscal year 1972, to implement the provisions of the Horse Protection Act of 1970. Regulations were published, forms developed, and distributed, information published and disseminated to the public, visual aids prepared, and 4 regional training meetings held with approximately 150 persons in attendance. These people attended 317 shows in 34

States with over 50,000 horses inspected for compliance. These inspections resulted in submission of a substantial number of alleged violations.

The use of infra-red therography equipment for diagnosis of soring is showing great promise. This equipment is also being used to evaluate the effect of various types and weights of boots on the pasterns of horses so that we may have a scientific background for boot restrictions.

14. Import-Export Inspection of Animals and Animal Products. Over 1.1 million animals and 2.8 million poultry were imported during 1972. Safeguards to prevent the introduction of exotic diseases were applied when these animals and poultry were offered for entry. New bloodlines were introduced in 1972 through importation, under stringent conditions, of bovine semen from countries infected with foot-and-mouth disease.

To further the development of export markets, Department veterinarians, through negotiations with several foreign governments, were able to reach agreements on health requirements for shipment of livestock to Russia (cattle, swine and goats); Greece (sheep, goats and swine); Northern Ireland (poultry); Venezuela (bovine semen); France (swine); Turkey (cattle and bovine semen); Switzerland (bovine semen); Italy (horses); Brazil (cattle); and Poland (bovine semen).
15. Salmonella. In all but a few of the rendering plants in the Salmonella program, either production of negative products and operation of self-monitoring programs are in effect or the sources of contamination have been identified and eliminated or are in the process of being eliminated. The Food and Drug Administration, with whom enforcement authority is vested, has been advised of those few plants not yet in the categories described above. Program operations were phased out during FY 1972. The Service will, however, maintain staff activity in the general area of Salmonella and continue to provide Salmonella serotyping support to State animal disease diagnostic laboratories.
16. Sheep Scabies. Almost eight million sheep were inspected for scabies during FY 1972. There were no flocks reported as infected with psoroptic sheep scabies. If, as anticipated, no cases of psoroptic sheep scabies occur through January of 1973, the United States will have been free of this disease for 3 years and a declaration of eradication can be issued.
17. Cattle Scabies. Approximately 36 million cattle were inspected. A total of 91 premises involving approximately 372,000 cattle were found infected with psoroptic cattle scabies. Federal quarantines were placed on parts of Texas, Oklahoma, and New Mexico in order to contain the infection. A concentrated effort was made in these States to find and properly treat all infected herds and to insure that animals moving in interstate commerce from the quarantined areas would not spread the disease. Outbreaks of the disease in Kansas, Colorado, Nebraska, and Iowa were caused by infected animals from the States under quarantine.

Veterinary Biologics

1. Regulatory Operations. Test laboratories operated by the Department in Ames, Iowa, performed check tests for purity and safety, or for efficacy, or both in about 35 percent of the serials of products manufactured under license. This resulted in rejection of about 86 million substandard doses involving 30 licensed establishments. See Exhibit 7 for concurrent testing actions during 1972.
2. Improved Test Methods and Laboratory Procedures. Veterinary biological products are used to diagnose, prevent, or treat animal diseases, some of which are transmissible to man. Examples of continuous progress in devising or improving methods and procedures for these biological products are as follows:

The Code of Federal Regulations was revised to permit the use of special media when testing for fungus if the product contained a certain type of preservative.

Four new Standard Requirements for single immunogenic fractions, diagnostic antigens, and uniform permitted formaldehyde levels were issued.

Revision of 23 existing Standard Requirements.

Issuance of precise procedures in 8 cases for use at the laboratory bench. These are used by both Veterinary Biologics laboratories and the commercial manufacturers to provide for close coordination of laboratory procedures.

Establishment of Master Seed lots of vaccine virus was completed for three bovine respiratory products. This permitted stricter control of quality of vaccine in serial-by-serial production from this material.

3. Efforts to Achieve Uniform Biological Testing. During fiscal year 1972, the Department provided 127 different types of veterinary biological references and reagents to the veterinary biological industry for quality control operations. Thirty-one of these biological references and reagents were produced by the Department during fiscal year 1972.
4. Rabies Immunity Study. A 3-year rabies immunity study in dogs was conducted using 4 commercially produced live virus rabies vaccines, and 1 killed virus vaccine. Results showed that the live virus vaccines provided good immunity at the end of 1 year, and at the end of 3-years. However, the killed vaccine, of tissue culture origin, did not produce good immunity at the end of 1 year.

As a result, the Department has taken two steps to correct this situation: (1) all killed virus vaccines of tissue culture origin are now required to be given in 2 doses, 30 days apart, and (2) the laboratory has instituted a project to further study the duration of immunity in dogs and to correlate these immunity responses with tests in laboratory animals.

5. Venezuelan Equine Encephalomyelitis. A U.S. Veterinary Biological License (Special) for Encephalomyelitis Vaccine, Venezuelan, was issued to three licensees. This vaccine, produced from a virus strain supplied by the Department of Defense, was made available in time for distribution for use in the late stages of the emergency control program which was instituted after the disease invaded northern Mexico and Texas.
6. Licensing Activities. During fiscal year 1972 the number of establishments licensed by the Department dropped from 44 to 41. This decrease was due to termination of the U.S. Veterinary Product License for hog cholera biologics and the voluntary withdrawal of some licensees because of inactivity due to inability to comply with the provisions of the regulations. At the close of fiscal year 1972, 789 product licenses and 3 import permits were in effect.

During the year, 127 product licenses were terminated, and 35 new product licenses were issued. Licensees presented for evaluation 51 applications for product licenses.

Licenses now in effect cover 220 generic products, manufactured in a total of about 13,500 component serials. Licensed biologics prevent, detect, or treat 54 animal diseases.

CONTINGENCY FUND

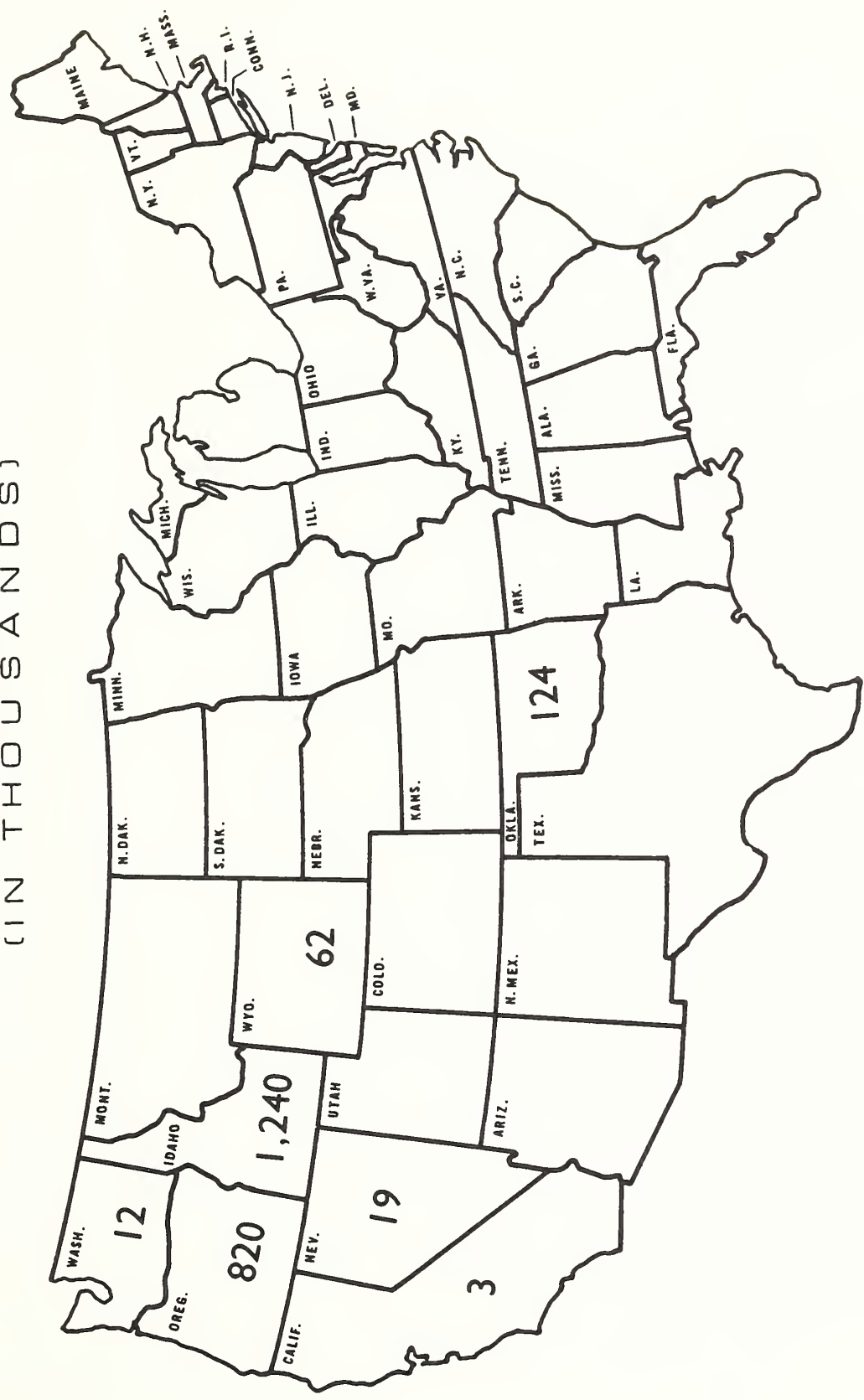
The releases from the Contingency Fund for control of pests and other emergency outbreaks of insects, plant diseases, and animal diseases are shown below. At least \$1 million of the \$1.5 million fund is reserved for plant and related insect pests.

	Obligations (in thousands)		
	F.Y. <u>1971</u>	F.Y. <u>1972</u>	F.Y. <u>1973 Estimate</u>
<u>Plant disease and pest control:</u>			
Boll weevil	\$273	- -	- -
Caribbean fruit fly	29	30	- -
Citrus blackfly	128	400	150
European crane fly	22	25	- -
Giant African snail	53	56	60
Golden nematode	155	150	100
Grasshopper	- -	- -	485
Gypsy moth	- -	220	- -
Oriental fruit fly	20	- -	- -
West Indian sugarcane root borer	<u>96</u>	<u>70</u>	<u>150</u>
Total, plant disease and pest control	776	951	945
<u>Animal disease and pest control:</u>			
Hog cholera	486	189	- -
Asiatic Newcastle disease ...	- -	311	- -
Screwworm	- -	- -	<u>500</u> ^{1/}
Total, animal disease and pest control	<u>486</u>	<u>500</u>	<u>500</u>
Total obligations or estimate..	1,262	1,451	1,445
Unobligated balances	<u>238</u>	<u>49</u>	<u>55</u>
Total, available, Contingency Fund	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>

^{1/} Release of funds for these purposes is anticipated during the third quarter of fiscal year 1973.

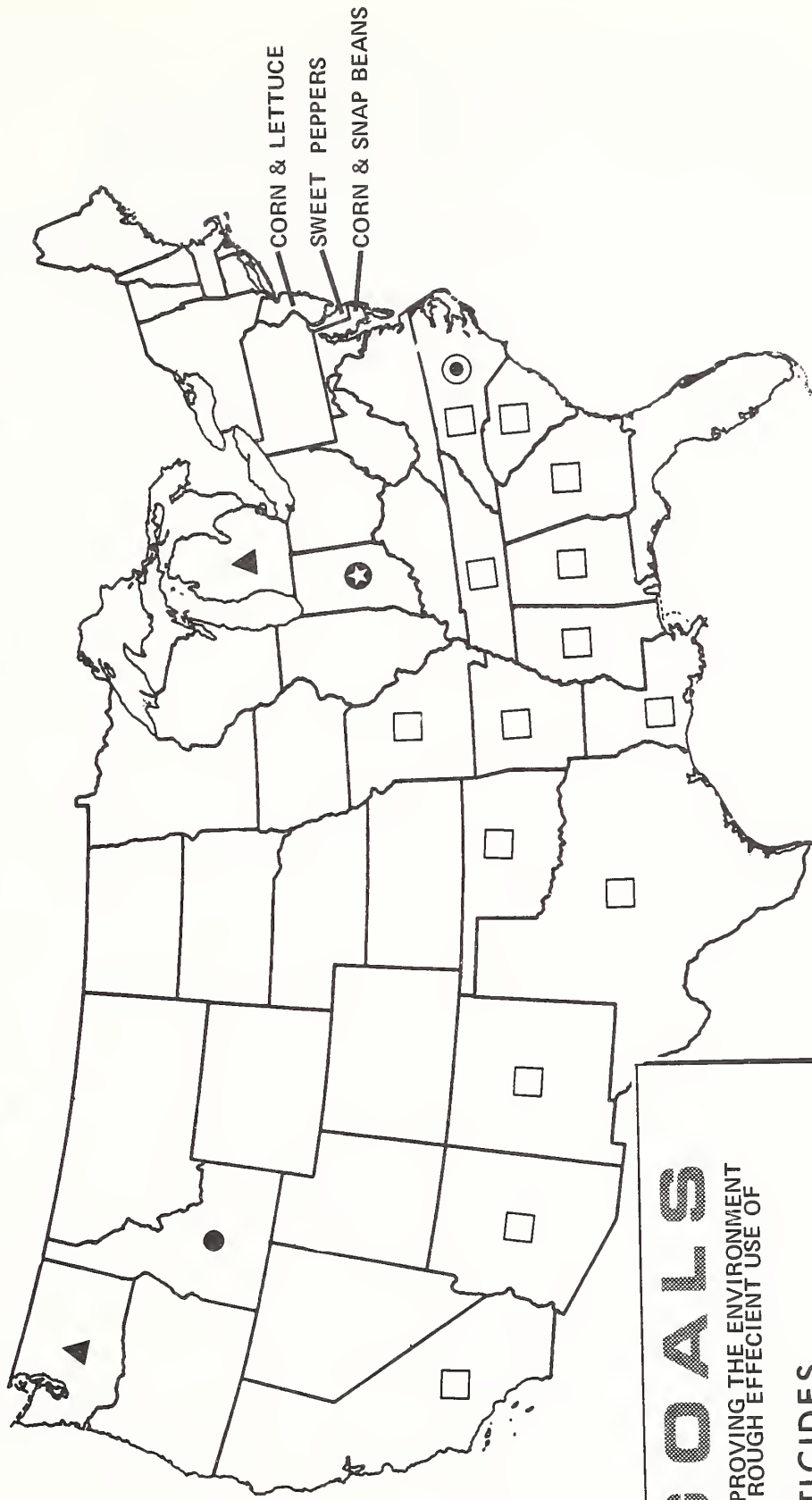
GRASSHOPPER CONTROL INCREASES IN 1972

ACREAGE FIGURES SHOWN
(IN THOUSANDS)



TOTAL ACREAGE TREATED IN 1972 - 2,280,000

A COOPERATIVE USDA - STATE / GROWERS PROGRAM PEST MANAGEMENT PROGRAMS - 1972



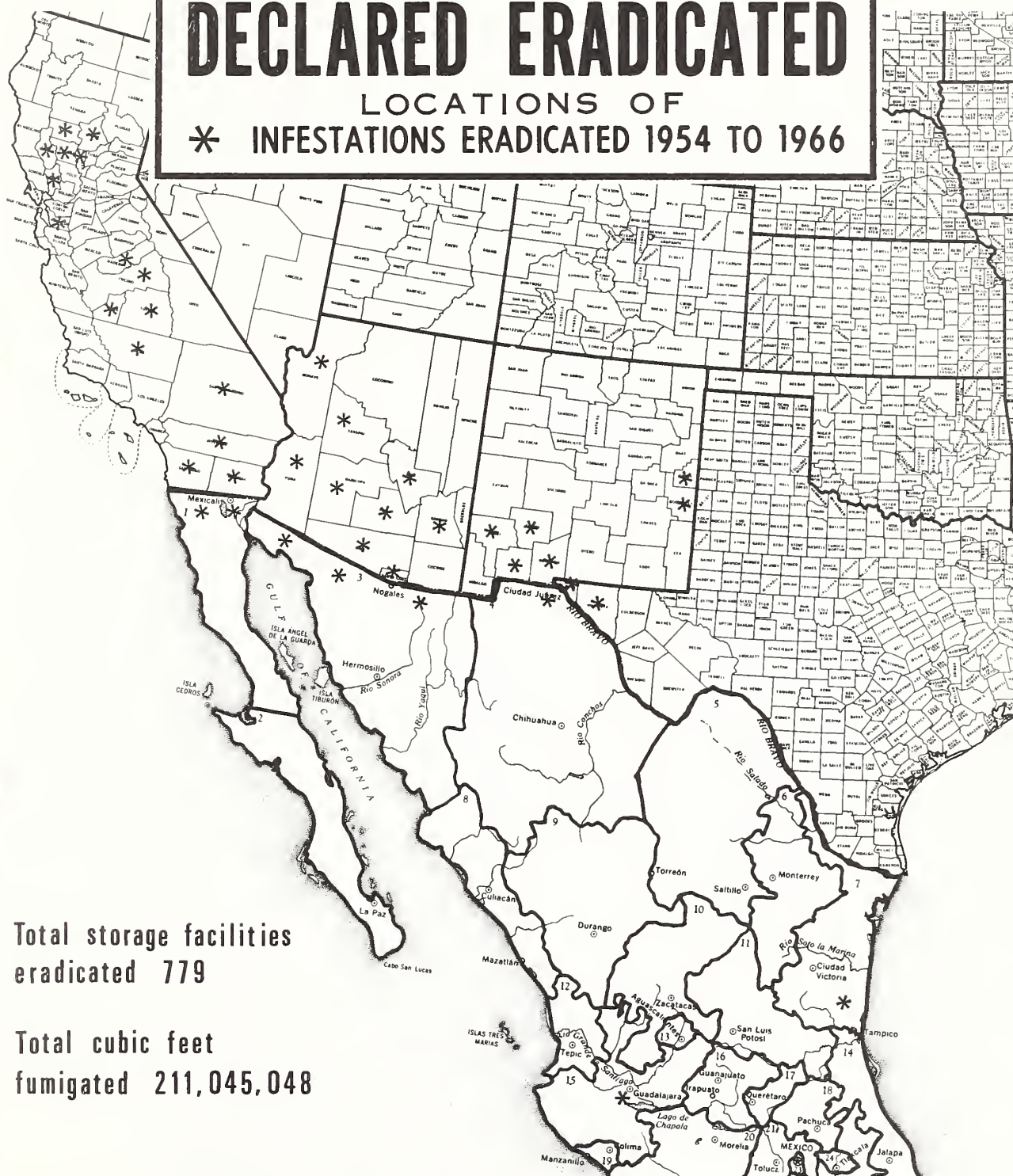
GOALS

IMPROVING THE ENVIRONMENT
THROUGH EFFICIENT USE OF

- PESTICIDES
- BIOLOGICAL FACTORS
- CULTURAL METHODS

KHAPRA BEETLE DECLARED ERADICATED

LOCATIONS OF
* INFESTATIONS ERADICATED 1954 TO 1966



Total storage facilities
eradicated 779

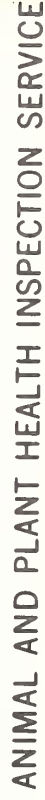
Total cubic feet
fumigated 211,045,048

QUARANTINE REVOKED SEPT. 2, 1972

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LIBRARY
1100 EAST 58TH STREET
CHICAGO, ILL. 60637
TEL: 773-936-5000
FAX: 773-936-5001
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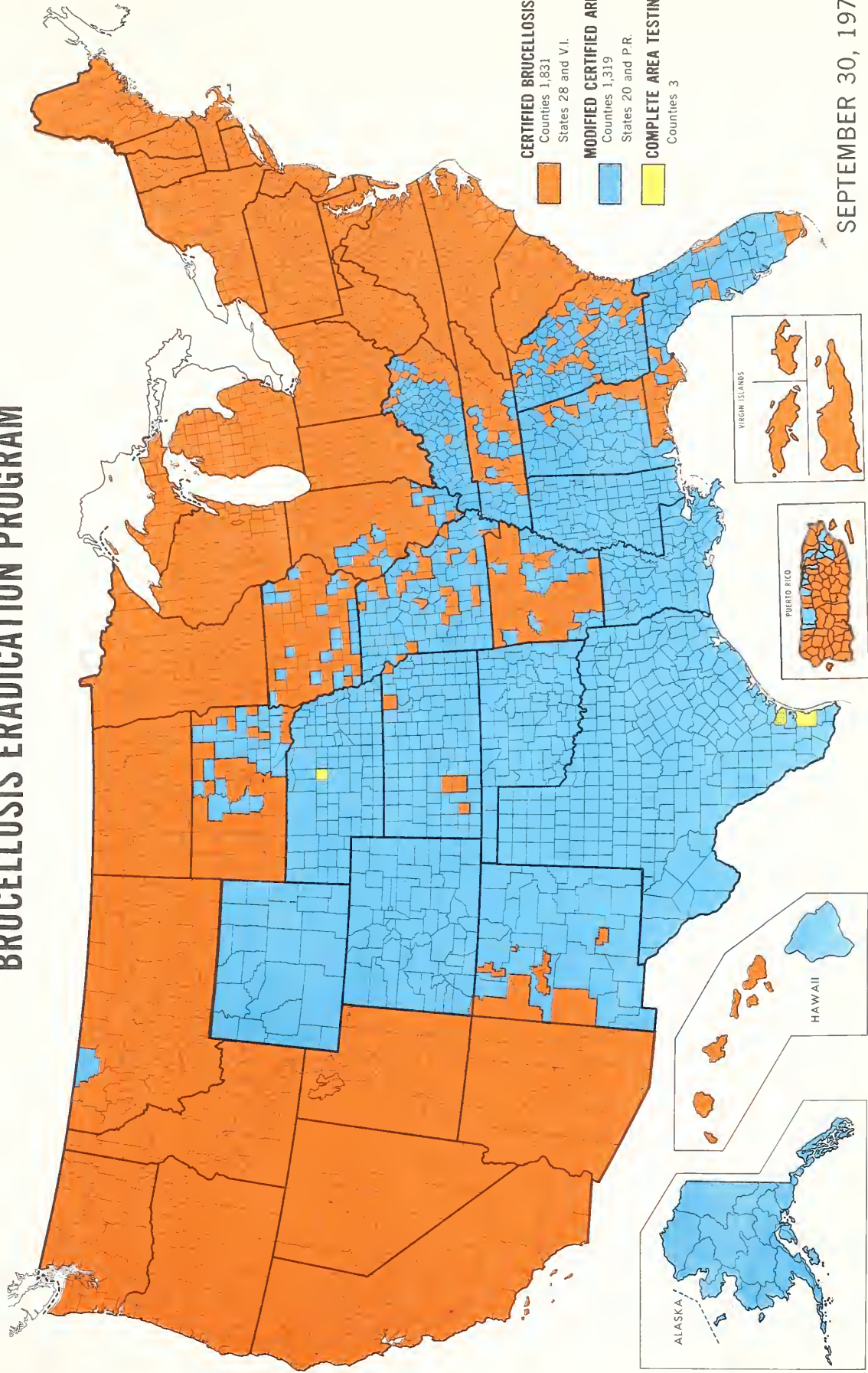
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JANUARY 1, 1973



Cooperative State-Federal

BRUCELLOSIS ERADICATION PROGRAM



SEPTEMBER 30, 1972

U.S. DEPARTMENT OF AGRICULTURE

VETERINARY SERVICES

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

Brucellosis Eradication

Fiscal Year 1972

State	Indemnity Payments	FEDERAL		Indemnity Payments	COOPERATORS	
		Operating Cost	Total		Operating Cost	Total
Alabama.....	126,900	492,640	619,540	5,700	625,655	631,355
Alaska.....	-	17,450	17,450	-	12,500	12,500
Arizona.....	7,325	66,847	74,172	5,875	176,451	182,326
Arkansas.....	76,200	585,372	661,572	-	511,113	511,113
California.....	29,353	306,299	335,652	12,498	499,229	511,727
Colorado.....	40,175	194,777	234,952	-	309,125	309,125
Connecticut.....	-	10,482	10,482	-	89,786	89,786
Delaware.....	50	19,675	19,725	50	14,832	14,882
Florida.....	379,675	861,972	1,241,647	234,125	1,027,216	1,261,341
Georgia.....	73,250	599,342	672,592	16,935	1,025,283	1,042,218
Hawaii.....	-	60,669	60,669	75	108,148	108,223
Idaho.....	22,600	197,109	219,709	7,171	321,135	328,306
Illinois.....	104,325	243,285	347,610	75,500	839,885	915,385
Indiana.....	18,775	222,463	241,238	-	495,189	495,189
Iowa.....	11,969	628,800	640,769	10,735	636,903	647,638
Kansas.....	121,525	294,966	416,491	-	816,171	816,171
Kentucky.....	76,350	262,155	338,505	-	960,311	960,311
Louisiana.....	473,632	668,163	1,141,795	7,450	807,561	815,011
Maine.....	550	31,061	31,611	-	96,333	96,333
Maryland.....	300	178,211	178,511	250	207,500	207,750
Massachusetts.....	475	89,635	90,110	450	39,579	40,029
Michigan.....	-	172,520	172,520	800	801,183	801,983
Minnesota.....	43,393	338,929	382,322	7,218	617,489	624,707
Mississippi.....	729,425	786,473	1,515,898	-	1,132,823	1,132,823
Missouri.....	118,675	329,824	448,499	218,475	1,350,193	1,568,668
Montana.....	3,950	158,039	161,989	-	385,590	385,590
Nebraska.....	16,625	344,052	360,677	8,069	692,146	700,215
Nevada.....	8,300	125,139	133,439	-	125,000	125,000
New Hampshire.....	-	10,561	10,561	-	43,441	43,441
New Jersey.....	575	26,294	26,869	750	117,566	118,316
New Mexico.....	22,850	234,327	257,177	-	215,772	215,772
New York.....	1,400	106,827	108,227	4,843	656,472	661,315
North Carolina.....	1,811	108,708	110,519	1,798	318,758	320,556
North Dakota.....	3,025	138,132	141,157	-	431,766	431,766
Ohio.....	-	138,281	138,281	-	419,276	419,276
Oklahoma.....	208,875	814,438	1,023,313	-	1,309,339	1,309,339
Oregon.....	5,300	107,911	113,211	170,757	269,371	440,128
Pennsylvania.....	21,945	136,913	158,858	11,524	1,123,730	1,135,254
Rhode Island.....	-	8,185	8,185	-	73,290	73,290
South Carolina.....	650	226,622	227,272	475	291,903	292,378
South Dakota.....	18,190	331,738	349,928	15,323	546,577	561,900
Tennessee.....	301,722	465,947	767,669	-	357,694	357,694
Texas.....	-	1,606,861	1,606,861	-	1,356,906	1,356,906
Utah.....	-	173,231	173,231	-	147,379	147,379
Vermont.....	375	52,900	53,275	740	69,189	69,929
Virginia.....	14,175	113,443	127,618	-	258,327	258,327
Washington.....	3,025	67,092	70,117	425	92,346	92,771
West Virginia.....	1,550	124,057	125,607	-	13,644	13,644
Wisconsin.....	8,119	350,371	358,490	14,400	1,289,717	1,304,117
Wyoming.....	13,725	161,813	175,538	-	254,696	254,696
Puerto Rico.....	63,650	173,263	236,913	34,650	521,775	556,425
Virgin Islands.....	-	-	-	-	1,700	1,700
Division						
Headquarters						
and service						
level admini-						
stration	-	1,399,533	1,399,533	-	-	-
TOTAL	3,174,759	15,363,797	18,538,556	867,061	24,904,963	25,772,024

CONCURRENT TESTING ACTIONS FOR VETERINARY BIOLOGICS
(Fiscal Year 1972)

<u>Animals for Which Intended</u>	<u>Amount Manufactured</u>		<u>Amount Marketed</u>		<u>Amount Rejected</u>	
	<u>Serials</u>	<u>Doses (Millions)</u>	<u>Serials</u>	<u>Doses (Millions)</u>	<u>Serials</u>	<u>Doses (Millions)</u>
Poultry	1,890	11,621.9	1,722	11,095.0	168	526.9
Swine	487	48.0	463	46.7	24	1.3
Cattle	5,598	404.0	5,127	369.0	471	35.0
Sheep	265	27.0	262	26.5	3	.5
Horses	1,386	11.4	1,375	11.1	11	.3
Dogs	3,567	90.6	3,181	77.7	386	12.9
Cats	207	5.1	199	4.9	8	.2
Mink	<u>148</u>	<u>19.0</u>	<u>131</u>	<u>16.7</u>	<u>17</u>	<u>2.3</u>
TOTAL	13,548	12,227.0	12,460	11,647.6	1,088*	579.4*

* Includes serials and doses rejected by both manufacturers and USDA in accordance with the standards developed by USDA.

(b) Animal Quarantine Station

PROJECT STATEMENT

Project	:	1972	:	1973 (estimated)	:	1974 (estimated)
Construction of Animal Quarantine:	:	:	:	:	:	:
Station	:	- -	:	\$130,000	:	\$390,660
Unobligated balance, start of	:	:	:	:	:	:
year	:	-\$94,060	:	-94,060	:	-64,060
Unobligated balance, end of	:	:	:	:	:	:
year	:	94,060	:	64,060	:	- -
Total available or estimate	:	- -	:	100,000	:	326,600

STATUS OF PROGRAM

Public Law 88-592, approved September 12, 1964, authorized the sale of the Animal Quarantine Station, at Clifton, N.J., to the City of Clifton, and application of the proceeds of sale to the planning and construction costs of a new station in the New York-New Jersey port and airport area.

A sales contract between the Department and the City of Clifton was executed on December 16, 1966, at the appraised value of \$526,600. In accordance with the contract terms, \$100,000 was paid to the Department upon execution of the contract. The remaining \$426,600 will be used together with \$1,500,000 which was provided in 1970 under the appropriation, Salaries and Expenses, Agricultural Research Service, for construction and related costs of the new quarantine station.

The Department has recently been informed by the General Services Administration that the proposed site on Floyd Bennett Field is not available. The Department is presently looking at two other Federal sites which are suitable for the relocation of the Animal Quarantine Station.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PASSENGER MOTOR VEHICLES

The 1974 Budget Estimates propose the purchase of 6 additional sedans, and the replacement of 165 of the present 661 passenger motor vehicles. Present vehicles are being fully utilized and there are no surplus cars available.

Additional Vehicles

The six additional sedans will be required for use in the joint US-Mexico Screwworm Eradication Program to be conducted in Mexico.

The new cars will be required for use by the director, co-director and other staff officials for transportation to conferences with officials of the Mexican Government, the American Embassy and members of the Joint Commission, concerning the progress of the program.

They will also be used for travel throughout Mexico by personnel conducting field work studies, ecological studies and limited surveys of native populations of screwworms and surveys of the effects and results of the aerial release program as the program progresses.

Replacements

It is estimated that all of the 165 passenger motor vehicles to be replaced will either have mileage of more than 60,000, or be 6 or more years old.

Approximately 96 percent of the vehicles owned by the Animal and Plant Health Inspection Service are operated in daily farm-to-farm travel in the control and eradication of tuberculosis, brucellosis, screwworms, sheep scabies, cattle tick fever, hog cholera, and various plant pest control programs. About 4 percent are operated in travel on animal and plant quarantine work. They are frequently operated over rough and rugged roads in all kinds of weather. In order to keep them in safe and dependable operating condition maintenance costs are frequently high. However, the control and eradication activities, testing and inspection cannot be carried on without them. In most cases, employees who own cars are reluctant to use them for even limited periods because of the hard usage to which they are subjected in this work. The replacements recommended will make it possible for those cars to be replaced which would be uneconomical to continue in operation because of their age, mileage, or both.

Age and Mileage Data for passenger-carrying vehicles on hand as of June 30, 1972:

<u>Age-Year</u> <u>Model</u>	<u>Age Data</u>		<u>Lifetime</u> <u>Mileage</u> (thousands)	<u>Mileage Data</u>	
	<u>Number of</u> <u>Vehicles</u>	<u>Percent</u> <u>of Total</u>		<u>Number of</u> <u>Vehicles</u>	<u>Percent</u> <u>of Total</u>
1965	7	1	Over 100	13	2
1966	18	3	80-100	78	12
1967	21	3	60-80	144	23
1968	125	20	40-60	158	25
1969	146	23	20-40	161	26
1970	158	25	Under 20	77	12
1971	156	25			
1972	- -	- -			
Totals	631*	100		631	100

*Excludes 8 vehicles used in foreign countries.

AIRCRAFT

Additional Aircraft

The 69 additional aircraft will be required for use in the joint U.S.-Mexico Screwworm Eradication Program.

Two of these aircraft will be purchased and will serve the purpose of observation planes, being flown behind the planes actually involved in the aerial release of sterile screwworm flies. In this regard, they will be utilized in performing the dual function of overall supervision of the fly releases to insure proper delivery in the most critical areas and the gathering data from inflight observations critical to methods development work.

The data collected from these observations will, among other purposes, permit us to evaluate the mechanics of the fly release system which we are presently using and to develop modifications, if needed, in order to achieve maximum effectiveness in this expanded program.

Sixty-seven aircraft will be obtained without cost from the Department of Defense and other Agencies. Of the 67 aircraft, APHIS currently has 25 on loan from the Department of Defense and one on loan from the Southwest Animal Health Research Foundation. Loan agreements must be renewed annually. These planes are used for sterile screwworm fly drops in the Southwestern U.S. and Northern Mexico. With the initiation of the joint U.S. - Mexico Screwworm program an additional 41 aircraft will be needed for the same purpose in order to move the screwworm barrier zone to the Isthmus of Tehuantepec. Suitable aircraft are in short supply and some Agencies are reluctant to relinquish surplus aircraft on a loan basis. Since these aircraft are needed for a continuing USDA program, the Department should take permanent custody of them for the duration of the program.

Replacements

*Two replacement planes are required primarily in plant pest control operations. These planes are used throughout the United States for investigating and demonstrating the use of special equipment for suppression of destructive insects attacking crops, aerial surveys, aerial application tests, and insect trapping operations. Planes rapidly become obsolete and uneconomical to repair and are subject to many mishaps. Replacement will not be made, however, if it is found practical and economically feasible to retain the present equipment.

COOPERATIVE STATE RESEARCH SERVICE

Purpose Statement

The Cooperative State Research Service was established by Secretary's Memorandum No. 1462 dated July 19, 1961 and Supplement 1, dated August 31, 1961 under Reorganization Plan No. 2 of 1953. The primary function of the Service is to administer acts of Congress that authorize Federal appropriations for agricultural research carried on by the State agricultural experiment stations of the 50 States, Puerto Rico, Guam, and the Virgin Islands by approved schools of forestry and non-profit institutions.

Acts under which payments to States may be made include:

1. Agricultural Experiment Stations Act of August 11, 1955, (Hatch Act of 1887, as amended - 7 U.S.C. 361a-361i), Education Amendments of 1972 (86 Stat. 350-52).
2. Cooperative Forestry Research Act of October 10, 1962, (16 U.S.C. 582a-582a-7), Education Amendments of 1972 (86 Stat. 350-52).
3. Act of September 6, 1958, (42 U.S.C. 1891-1893) and the Act of August 4, 1965, (7 U.S.C. 450i), authorizing grants for support of scientific research.
4. Research Facilities Act of July 22, 1963, (7 U.S.C. 390-390k).
5. Rural Development Act of 1972, (86 Stat. 671-74).

Administration of payments and grants involves the review and approval in advance of each individual research proposal submitted by a State agricultural experiment station or other institution to be financed in whole or in part from Federal-grant funds, the disbursement of the funds, and the continuous review and evaluation of research programs and expenditures thereunder. The Service also encourages and assists in the establishment and maintenance of cooperation within and between the States, and participates in the planning and coordination of research programs between the States and the U.S. Department of Agriculture.

The program coordination and planning is carried out by a Cooperative State Research Service staff located entirely in Washington, D.C.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

Item	Actual 1972		Estimated Available, 1973		Budget Estimate 1974	
	Amount	Man- Years	Amount	Man- Years	Amount	Man- Years
Cooperative State Research Service:						
Appropriations.....	\$82,948,000	90	\$91,438,000	86	\$73,700,000	70
Obligations under other USDA:						
appropriations:						
Various research agencies						
for share of cost of Cur-						
rent Research Information						
System (CRIS).....	412,898	16	437,600	16	437,600	16
Total, Agricultural Approp-						
riation Bill.....	83,360,898	106	91,875,600	102	74,137,600	86
Other Funds:						
Agency for International						
Development:						
Training of foreign						
participants.....	642	- -	660	- -	700	- -
Agricultural experiment						
stations:						
Provide technical assist-						
ance in administration						
of various agricultural						
experiment stations.....	23,398	1	19,000	1	19,000	1
Miscellaneous reimburse-						
ments.....	10,000	- -	22,740	- -	22,740	- -
Association of State Col-						
leges and Universities for:						
publishing report on						
McIntire-Stennis Program..	2,439	- -	3,700	- -	3,900	- -
Total, Other funds.....	36,479	1	46,100	1	46,340	1
Total, Cooperative State						
Research Service.....	83,397,377	107	91,921,700	103	74,183,940	87

COOPERATIVE STATE RESEARCH SERVICE

Appropriation Act, 1973	\$91,438,000
Budget Estimate, 1974	73,700,000
Decrease in Appropriation	-17,738,000

SUMMARY OF INCREASES AND DECREASES

	<u>1973</u>	<u>Increase or Decrease</u>	<u>1974 Estimate</u>
Payments to agricultural experiment stations under the Hatch Act, and for penalty mail.....	\$69,104,000	-\$13,539,000	\$55,565,000
Grants for cooperative forestry research.....	6,444,000	-2,482,000	3,962,000
Contracts and grants for scientific research.....	15,400,000	-4,217,000	11,183,000
Funds for rural development research.....	- -	+2,500,000	2,500,000
Federal administration.....	490,000	- -	490,000
Total available.....	<u>91,438,000</u>	<u>-17,738,000</u>	<u>73,700,000</u>

PROJECT STATEMENT

Project	1972	1973 (estimated)	Increase or Decrease	1974 (estimated)
1. <u>Payments to agricultural experiment stations under the Hatch Act and penalty mail:</u>				
a. Research program.....	\$63,159,876	\$67,004,411	-\$13,259,900(1)	\$53,744,511
b. Set-aside for federal administration (3%).....	1,637,784	1,835,589	-410,100(1)	1,425,489
c. Penalty mail.....	209,000	264,000	+131,000(2)	395,000
Total under Hatch Act....	65,006,660	69,104,000	-13,539,000	55,565,000
2. <u>Grants for cooperative forestry research.....</u>	4,672,000	6,444,000	-2,482,000(1)	3,962,000
3. <u>Contracts and grants for scientific research.....</u>	12,500,000	15,400,000	-4,217,000(1)	11,183,000
5. <u>Funds for rural development research:</u>				
a. Research program.....	- -	- -	+2,400,000(3)	2,400,000
b. Set-aside for Federal administration (4%).....	- -	- -	+100,000(3)	100,000
Total under Rural Development Act.....	- -	- -	+2,500,000	2,500,000
6. <u>Federal administration (direct appropriation).....</u>	637,000	490,000	- -	490,000
Unobligated balance.....	132,340	- -	- -	- -
Total available or estimate....	82,948,000	91,438,000	-17,738,000	73,700,000

a/ Of this amount, \$30,000 has been withheld from use in 1973 principally from funds budgeted for travel.

(1) A decrease in grants to State institutions of \$20,369,000 consisting of:

(a) A decrease of \$13,670,000 under the formula provision of the Hatch Act (including a decrease of \$410,100 for administration of the Hatch Act). (\$68,840,000 available in 1973.)

- (b) A decrease of \$2,482,000 for Cooperative Forestry Research (\$6,444,000 available in 1973). Of this amount, only \$982,000 represents a reduction in program level from 1973. Of the funds available in 1973, \$1,500,000 was withheld from use in 1973.
- (c) A decrease of \$4,217,000 for Contracts and Grants for Scientific Research (\$15,400,000 available in 1973). Funds appropriated in 1973 for the Land-Grant Colleges of 1890 and Tuskegee Institute are not changed in the 1974 Budget.

These reductions represent one aspect of an overall realignment of research programs so as to concentrate available resources in such high priority areas as rural development, consumer protection, and environmental quality. Efforts are being made to improve the quality of research, eliminate duplication, and improve coordination between the research activities of the Department and those of the State agricultural experiment stations, schools of forestry, and the Land-Grant Colleges of 1890.

- (2) An increase of \$131,000 for Penalty Mail under the Hatch Act (\$264,000 available in 1973).

Need for Increase: Penalty mail costs of the Agricultural Experiment Stations are provided for under Section 6 of the Hatch Act as amended in 1955. (7 U.S.C. 361 f).

Bulletins, reports, periodicals, reprints of articles and other publications necessary for the dissemination of results of the researches and experiments, including lists of publications available for distribution by the State Agricultural Experiment Stations are transmitted in the mails of the United States under penalty indicia. The funds appropriated under this authority are reimbursed to the Postal Service.

In accordance with Public Law 91-375 rates of postage and fees for services were increased. As a result, an increase in payments to the Postal Service is mandatory to cover the increased cost of mailing. Increased funding combined with proposed revisions in appropriation language should overcome this problem in subsequent years. The funds requested in 1974 include \$93,000 to cover outstanding 1972 postal bills owed to the Postal Service, and \$38,000 in anticipated additional costs in 1973.

- (3) An increase of \$2,500,000 for Rural Development Research to conduct pilot research in support of the development of rural areas (no funds were available in 1973).

Need for Increase: Many rural areas are experiencing problems in providing opportunities for increased numbers of Americans to work and enjoy a standard of living comparable to citizens living and working in urban areas. A balanced national development program is needed to provide essential knowledge for successful programs of rural development. Expertise required to provide such information through research exists in many forms in the Land-Grant universities and other colleges and universities.

Plan of Work: The \$2.5 million will be used for the research component of joint research extension activities in support of selected pilot developmental programs. An additional \$2.5 million is requested for the extension component under the Extension Service. The research-extension projects should be useful to developmental activities of agencies of government,

multi-county planning and development districts, organizations of citizens, or other groups which are carrying out such programs and activities. These pilot programs will also serve as a focal point to add expertise from other colleges and universities to research efforts of the Land-Grant institutions in support of developmental activities.

As provided under the Rural Development Act of 1972, Section 503, 4% of appropriations shall be used for Federal Administration, and 10% of appropriations will finance cooperative research work between two or more States to support research on high priority problems from which these States can benefit.

* * * * *

The following table summarizes the funds available for Federal administration under the Hatch Act and the Rural Development Act of 1972, including funds available under the direct appropriation for Cooperative State Research Service administration:

	<u>1972</u>	<u>1973</u> <u>Appropriations</u>	<u>Increase or</u> <u>Decrease</u>	<u>1974</u> <u>Estimate</u>
Direct appropriation	\$637,000	\$490,000	- -	\$490,000
Set-aside for Federal administration of Hatch Act (3%)	1,724,289	1,835,589	-\$410,100	1,425,489
Set-aside for Federal administration of Rural Development Act (4%) ..	- - <u>2,361,289</u>	- - <u>2,325,589</u>	+100,000 <u>-310,100</u>	100,000 <u>2,015,489</u>

STATUS OF PROGRAM

This appropriation provides the Federal Government's contribution to land-grant agricultural experiment stations, schools of forestry and other eligible institutions in the various States and in Puerto Rico, Guam and the Virgin Islands, established pursuant to the provisions of the Hatch Act of 1887, as amended by the Act of August 11, 1955, and further amended by P.L. 92-318 approved June 23, 1972, Cooperative Forestry Research Act of October 10, 1962, as amended by P.L. 92-318 approved June 23, 1972, Research Facilities Act of July 22, 1963, and Grants for Scientific Research, Section 2 of Public Law 89-106, approved August 4, 1965.

The State institutions conduct research and experiments on the problems constantly encountered in the development of a permanent and sustaining agriculture and forestry, and in the improvement of the economic and social welfare of rural and urban families. Because of differences in climate, soil, market outlets, and other local conditions, each State has distinct problems in the production and marketing of crops and livestock. Farmers, foresters and rural people in the individual States naturally look to their State agricultural experiment stations, universities and colleges for solution of the State and local problems and, in recent years, have requested increased services to help meet changing conditions.

Research programs at the State agricultural experiment stations, to be most effective, include participation in regional and national programs. Joint attack by a group of State stations is the most effective and often the only practical approach to problems of common interest. The stations, to an ever increasing extent, are acting together as regional groups to provide cooperative coordinated attacks on problems of regional and national interest. In a similar manner, the research programs of the State agricultural experiment stations and the Department of Agriculture are supplementary and interdependent.

The Federal-grant funds constitute a powerful force in bringing about inter-State cooperation and Federal-State collaboration in the planning and conduct of this overall program of agricultural research. Therefore, the impact of the Federal-grant funds cannot be fully evaluated solely on the basis of the amount of funds provided.

Research at the State institutions is organized into a program of projects that is submitted for review and evaluation by the Service. The program of projects is financed wholly or in part from Federal-grant funds. Programs and projects are evaluated periodically with station scientists by administrators and technical staff of the Cooperative State Research Service. The evaluation includes consideration of quality and productivity of the program and projects. The continuing process of research evaluation by station scientists and the staff of the Cooperative State Research Service results in a dynamic program with approximately 15 to 20 percent of the projects being replaced by new projects each year.

Distribution of Payments:

Hatch Act

The Agricultural Experiment Stations Act of August 11, 1955 (Hatch Act, as amended) provides that the distribution of Federal payments to States for fiscal year 1955 shall become a fixed base and that any sums appropriated in excess of the 1955 level shall be distributed in the following manner:

- 20% shall be allotted equally to each State.

- not less than 52% shall be allotted to the States as follows:

- One-half in an amount proportionate to the relative rural population of each State to the total rural population of all States, and one-half in an amount proportionate to the relative farm population of each State to the total farm population of all States.

-not more than 25% shall be allotted to the States for cooperative research in which two or more State agricultural experiment stations are cooperating to solve problems that concern the agriculture of more than one State.

-3% shall be available to the Secretary of Agriculture for the administration of this Act.

The Act also provides that any amount in excess of \$90,000 available for allotment to any State, exclusive of the regional research fund, shall be matched by the State out of its own funds for research, and for the establishment and maintenance of facilities necessary for the prosecution of such research. It also requires marketing research be continued as it existed in fiscal year 1955 and provides that 20% of the funds appropriated for distribution to States in excess of the 1955 appropriations shall be used for conducting marketing research projects approved by the Department of Agriculture.

Cooperative Forestry Research

The Cooperative Forestry Research Act of October 10, 1962 provides that the apportionment among States shall be determined by the Secretary after consultation with a national advisory board of not less than seven officials of the forestry schools of the State-certified eligible colleges and universities chosen by a majority of such schools. In making such apportionments consideration shall be given to pertinent factors including, but not limited to, areas of non-Federal commercial forest land and volume of timber cut annually from growing stock. The Act also limits the payments to the amount made available and budgeted from non-Federal sources by the certified institutions for expenditure for forestry research.

Research Facilities

The Research Facilities Act of July 22, 1963 provides that funds be allocated as follows:

- one-third equally to each State.
- two-thirds allotted to the States as follows:
 - one-half in an amount proportionate to the relative rural population of each State to the total rural population of all States, and one-half in an amount proportionate to the relative farm population of each State to the total farm population of all States.

The Act also limits the payments to the amount made available by such State from non-Federal funds for the same purpose.

Funds were appropriated, under the authority of this Act, for fiscal years 1965-1968 and 1970. No funds were appropriated for this program in fiscal years 1969 and 1971-1973.

Scientific Research Grants

Section 2 of the Act of August 4, 1965 (7 U.S.C. 450i) authorizes grants to State agricultural experiment stations, colleges, universities, and other research institutions and organizations and to Federal and private organizations and individuals for research to further the programs of the Department of Agriculture. Of the total funds available, \$283,000 was used each year from 1967-1971 to finance grants to the sixteen land-grant colleges established pursuant to the second Morrill Act of 1890. In fiscal year 1972, \$8,883 million of the \$12.5 million appropriated for this program was earmarked for the colleges of 1890. Two million dollars of the \$2.9 million increase in fiscal year 1973 was also earmarked for these colleges and was placed in reserve pending determination of qualified and necessary projects.

Penalty Mail

The Hatch Act of 1887, as amended (7 U.S.C. 361f), provides for the mailing under penalty indicia by agricultural experiment stations of bulletins, reports, periodicals, reprints of articles, and other publications, including lists of publications necessary for the dissemination of results of research. Mailings include not only those to individual farmers upon request but also to newspapers, libraries, other experiment stations, and organizations interested in results of research and dissemination of such results.

Under Title 39 U.S.C. 3206(b) and 3202(a) (4), the Department paid to the U. S. Postal Service \$209,000 to cover postage of mail sent under the penalty privilege by the State agricultural experiment stations during fiscal year 1972. This payment covered the mailing of approximately 2.5 million items by the experiment stations in the 50 States and Puerto Rico. Approximately the same volume of mail is anticipated in fiscal year 1973 and 1974. Funds of \$264,000 were appropriated in fiscal year 1973 for payments to the U. S. Postal Service.

Table 1 shows the distribution of payments from appropriations of the Cooperative State Research Service to State agricultural experiment stations and other State institutions. It also reflects non-Federal funds (primarily State appropriations) for research at State agricultural experiment stations, and at cooperating forestry and other State institutions for the fiscal year 1972. Table 2 shows the appropriations for State agricultural experiment stations and other eligible institutions for the fiscal years 1972, 1973, 1974. Table 3 indicates the estimated distribution of 1973 Federal funds by research program areas.

Table 1

Distribution of Federal Payments to States and Non-Federal Funds for Research at State Agricultural
Experiment Stations and Other State Institutions - Fiscal Year 1972

State	Hatch Act, as amended			Cooperative:		Contracts:		Total Federal- Grant Funds	Non-Federal Funds	Grand Total
	Regular Formula	Regional Research	Total	Forestry Research (M-S)	Grants for: Scientific Research	and Other Funds				
Alabama.....	\$1,350,007	\$278,778	\$1,628,785	\$152,700	\$1,254,694	-	-	\$3,036,179	\$4,979,363	\$8,015,542
Alaska.....	359,391	43,971	403,362	79,562	-	-	-	482,924	1,032,685	1,515,609
Arizona.....	478,799	273,559	752,358	61,279	110,000	-	-	923,637	4,807,952	5,731,589
Arkansas.....	1,117,020	236,035	1,353,055	140,510	721,129	-	-	2,214,694	4,596,533	6,811,222
California.....	1,362,745	493,890	1,856,635	158,794	352,000	-	-	2,367,429	25,613,391	27,980,820
Colorado.....	605,827	371,519	977,346	91,752	-	-	-	1,069,098	3,022,797	4,091,895
Connecticut.....	500,267	180,717	680,984	60,213	-	-	-	741,197	2,680,784	3,421,981
Delaware.....	385,026	142,727	527,753	24,709	239,373	-	-	791,835	827,833	1,619,668
Florida.....	812,579	160,436	973,015	137,462	375,076	-	-	1,485,553	14,094,013	15,579,566
Georgia.....	1,429,260	356,559	1,785,819	161,842	668,551	-	-	2,616,212	7,090,505	9,706,717
Hawaii.....	409,784	141,467	551,251	36,898	-	-	-	588,149	3,752,513	4,340,662
Idaho.....	554,334	221,973	776,307	100,894	-	-	-	877,201	2,610,866	3,488,067
Illinois.....	1,495,479	330,897	1,826,376	82,611	25,000	-	-	1,933,987	7,928,008	9,861,995
Indiana.....	1,330,529	304,594	1,635,123	85,658	25,000	-	-	1,745,781	6,574,561	8,320,342
Iowa.....	1,361,390	477,112	1,838,502	64,325	172,000	-	-	2,074,827	6,587,128	8,661,955
Kansas.....	920,075	264,260	1,184,335	39,946	80,000	-	-	1,304,281	6,295,781	7,600,062
Kentucky.....	1,487,957	294,079	1,782,036	94,799	670,029	-	-	2,546,864	5,946,355	8,493,219
Louisiana.....	1,009,600	209,365	1,218,965	143,558	623,036	-	-	1,985,559	7,493,516	9,479,075
Maine.....	533,857	194,727	728,584	134,415	-	-	-	862,999	1,466,037	2,329,036
Maryland.....	692,022	229,949	921,971	67,372	336,756	-	-	1,326,099	2,749,439	4,075,538
Massachusetts.....	622,481	231,735	854,216	58,230	-	-	-	912,446	1,145,082	2,057,528
Michigan.....	1,418,653	262,852	1,681,505	128,321	90,000	-	-	1,899,826	8,085,554	9,985,380
Minnesota.....	1,298,650	286,453	1,585,103	119,179	70,000	-	-	1,774,282	8,917,382	10,691,664
Mississippi.....	1,422,809	285,462	1,708,271	146,605	837,050	-	-	2,691,926	6,413,656	9,105,582
Missouri.....	1,362,184	276,579	1,638,763	110,036	654,559	-	-	2,403,358	6,285,457	8,688,815
Montana.....	528,603	259,944	788,547	103,941	96,900	-	-	989,388	3,260,043	4,249,431
Nebraska.....	832,550	287,390	1,119,940	33,851	174,900	-	-	1,328,691	7,587,306	8,915,997
Nevada.....	354,121	140,772	494,893	27,756	-	-	-	522,649	1,202,489	1,725,138
New Hampshire.....	424,262	144,103	568,365	73,468	-	-	-	641,833	494,960	1,136,793
New Jersey.....	602,797	321,139	923,936	46,042	70,000	-	-	1,039,978	5,866,085	6,906,063
New Mexico.....	498,943	148,682	647,625	49,088	140,000	-	-	836,713	1,612,397	2,449,110
New York.....	1,423,403	518,233	1,941,636	149,651	270,000	-	-	2,361,287	13,348,729	15,710,016

State	Hatch Act, as amended				Cooperative:				Contracts:				Total Federal-Grant Funds	Non-Federal	Grand Total
	Regular Formula	Regional Research	Total		Forestry Research (M-S)		Grants for Scientific Research	and Grants for Research	Other Fund						
North Carolina.....	\$2,064,265	\$390,902	\$2,455,167		\$155,747		\$880,854		-		\$3,491,768	\$9,285,513	\$12,777,281		
North Dakota.....	652,616	221,535	874,151		15,568		-		-		889,719	3,445,513	4,335,232		
Ohio.....	1,670,536	287,841	1,958,377		88,704		79,800		-		2,126,881	6,281,631	8,408,512		
Oklahoma.....	954,494	201,031	1,155,525		76,515		544,216		-		1,776,256	4,258,626	6,034,882		
Oregon.....	687,952	365,008	1,052,960		167,936		75,000		-		1,295,896	6,902,569	8,198,465		
Pennsylvania.....	1,755,678	398,794	2,154,472		122,226		-		-		2,276,698	4,955,628	7,232,326		
Puerto Rico.....	1,496,995	257,451	1,754,446		-		-		-		1,754,446	4,392,169	6,146,615		
Rhode Island.....	364,479	152,898	517,377		21,662		-		-		539,039	597,789	1,136,828		
South Carolina.....	1,168,187	231,865	1,400,052		125,273		567,848		-		2,093,173	3,079,284	5,172,457		
South Dakota.....	651,732	225,258	876,990		33,998		-		-		910,988	2,830,543	3,741,531		
Tennessee.....	1,523,062	294,024	1,817,086		106,989		606,051		-		2,530,126	3,693,226	6,223,352		
Texas.....	1,952,760	391,539	2,344,299		116,131		970,651		-		3,431,081	11,994,071	15,425,152		
Utah.....	445,721	269,746	715,467		55,184		-		-		770,651	1,829,951	2,600,602		
Vermont.....	450,271	119,070	569,341		70,420		-		-		639,761	718,459	1,358,220		
Virginia.....	1,329,429	260,704	1,590,133		131,368		634,527		-		2,356,028	4,467,927	6,823,955		
Washington.....	783,459	441,965	1,225,424		164,888		-		-		1,390,312	6,620,491	8,010,803		
West Virginia.....	906,583	181,260	1,087,843		97,846		-		-		1,185,689	1,146,714	2,332,403		
Wisconsin.....	1,307,631	320,184	1,627,815		113,084		85,000		-		1,825,899	12,348,038	14,173,937		
Wyoming.....	407,427	211,162	618,589		42,994		-		-		661,583	1,411,679	2,073,262		
Subtotal.....	49,558,681	13,592,195	63,150,876		4,672,000		12,500,000		-		80,322,876	274,629,021	354,951,897		
Committee of Nine (Travel)	-	9,000	9,000		-		-		-		9,000	-	9,000		
Unobligated Balance.....	28,467	17,368	45,835		-		-		-		45,835	-	45,835		
Subtotal.....	49,587,148	13,618,563	63,205,711		4,672,000		12,500,000		-		80,377,711	274,629,021	355,006,732		
Federal Administration from:															
Hatch Funds (3%).....	-	-	1,637,784		-		-		-		1,637,784	-	1,637,784		
Unobligated Balance.....	-	-	86,505		-		-		-		86,505	-	86,505		
CSRS Appropriation.....	-	-	-		-		-		\$637,000		637,000	-	637,000		
Unobligated Balance.....	-	-	-		-		-		-		-	-	-		
Subtotal.....	49,587,148	13,618,563	64,930,000		4,672,000		12,500,000		637,000		82,739,000	274,629,021	357,368,021		
Penalty Mail.....	-	-	-		-		-		209,000		209,000	-	209,000		
GRAND TOTAL.....	49,587,148	13,618,563	64,930,000		4,672,000		12,500,000		846,000		82,948,000	274,629,021	357,577,021		

Table 2

Appropriations for Cooperative State Research Service
Fiscal Years 1972, 1973 and 1974
(In dollars)

State	1972 Actual	1973 Estimate	1974 Estimate
Current Authorization:			
1. <u>Payments to Agricultural</u>			
<u>experiment stations</u>			
<u>under the Hatch Act:</u>			
a. <u>Distributed by formula:</u>			
Alabama.....	\$1,350,007	\$1,399,506	\$1,189,675
Alaska.....	359,391	369,354	307,325
Arizona.....	478,799	494,777	410,243
Arkansas.....	1,117,020	1,160,076	974,735
California.....	1,362,745	1,421,635	1,176,573
Colorado.....	605,827	630,734	513,090
Connecticut.....	500,267	537,971	435,947
Delaware.....	385,026	396,096	329,987
Florida.....	812,579	850,409	683,807
Georgia.....	1,429,260	1,486,733	1,246,891
Guam.....	-	303,009	247,156
Hawaii.....	409,784	419,860	357,453
Idaho.....	554,334	577,617	466,251
Illinois.....	1,495,479	1,582,807	1,232,737
Indiana.....	1,330,529	1,410,731	1,087,045
Iowa.....	1,361,390	1,446,544	1,105,529
Kansas.....	920,075	969,446	770,510
Kentucky.....	1,487,957	1,564,058	1,255,938
Louisiana.....	1,009,600	1,050,602	872,420
Maine.....	533,857	551,933	459,465
Maryland.....	692,022	721,853	585,365
Massachusetts.....	622,481	646,777	530,768
Michigan.....	1,418,653	1,496,516	1,180,692
Minnesota.....	1,298,650	1,379,036	1,057,416
Mississippi.....	1,422,809	1,474,536	1,256,798
Missouri.....	1,362,184	1,433,463	1,143,339
Montana.....	528,603	550,515	444,149
Nebraska.....	832,550	876,120	689,481
Nevada.....	354,121	363,774	302,982
New Hampshire.....	424,262	437,962	361,896
New Jersey.....	602,797	627,182	510,970
New Mexico.....	498,943	515,577	428,708
New York.....	1,423,403	1,497,037	1,196,971
North Carolina.....	2,064,265	2,161,117	1,774,516
North Dakota.....	652,616	682,729	546,079
Ohio.....	1,670,536	1,764,059	1,390,001
Oklahoma.....	954,494	995,291	818,501
Oregon.....	687,952	718,335	580,161
Pennsylvania.....	1,755,678	1,845,468	1,484,048
Puerto Rico.....	1,496,995	1,558,843	1,303,911
Rhode Island.....	364,479	374,028	313,577
South Carolina.....	1,168,187	1,211,040	1,025,839
South Dakota.....	651,732	683,436	540,880

(Continued on next page)

State	1972 Actual	1973 Estimate	1974 Estimate
Tennessee.....	\$1,523,062	\$1,593,330	\$1,306,600
Texas.....	1,952,760	2,042,007	1,684,259
Utah	445,721	459,406	383,567
Vermont.....	450,271	466,068	384,138
Virginia.....	1,329,429	1,387,439	1,145,780
Virgin Islands.....	-	299,087	244,313
Washington.....	783,459	819,084	661,198
West Virginia.....	906,583	938,374	794,429
Wisconsin.....	1,307,631	1,394,598	1,074,434
Wyoming.....	407,427	420,363	347,405
Subtotal.....	49,558,681	52,458,348	42,615,948
b. Regional Research Funds a/..	13,592,195	14,526,063	11,118,563
Committee of Nine Travel..	9,000	20,000	10,000
Total agricultural re- search under the Hatch Act.....	63,159,876	67,004,411	53,744,511
For administration.....	1,637,784	1,835,589	1,425,489
For penalty mail.....	209,000	264,000	395,000
Subtotal.....	65,006,660	69,104,000	55,565,000
2. Grants for cooperative forestry research b/.....	4,672,000	4,944,000	3,962,000
3. Contracts and grants for scien- tific research.....	12,500,000	15,400,000	11,183,000
4. Grants for research facilities.	-	-	-
5. Funds for rural development research	-	-	-
Research program.....	-	-	2,400,000
For administration.....	-	-	100,000
Subtotal.....	-	-	2,500,000
6. Federal Administration:	-	-	-
Included in item 1 above.....	(1,637,784)	(1,835,589)	(1,425,489)
Included in item 5 above.....	(-)	(-)	(100,000)
CSRS direct appropriation....	637,000	490,000	490,000
Subtotal.....	82,815,660	89,938,000	73,700,000
Unobligated balance.....	132,340	1,500,000	-
Total Available or Estimate.....	82,948,000	91,438,000	73,700,000

a/ Allotted to States on the basis of recommendations by a committee of experiment station directors and approved by the Cooperative State Research Service.

b/ Apportioned among the States on a basis determined by the Secretary after consultation with a national advisory board of not less than seven officials of forestry schools selected by eligible institutions.

Table 3
Estimated Distribution by Research Programs of Federal Payments to
State Agricultural Experiment Stations, Schools of Forestry and
Colleges of 1890 and Tuskegee Institute
Fiscal Year 1973 (In thousands of dollars)

Natural Resources Programs	
Soil and land use	\$2,810
Water and watersheds <u>1/</u>	1,476
Environmental quality	3,352
Fish and wildlife	1,115
Outdoor Recreation	681
Weather	445
Remote Sensing	119
Forestry Resources Programs	
Forestry	5,255
Unobligated funds	1,500
Crop Resources Programs	
Protection from disease, insect pests and weeds <u>2/</u>	11,023
Crop varieties and production systems for dependable and efficient production	16,215
Quality improvement, quality maintenance and marketing of crops	4,053
Animal Resources Programs	
Meat animal research	7,947
Dairy research	4,121
Poultry research	3,994
Other animal research	618
Quality improvement, maintenance and marketing of animal products	3,643
People, Communities and Institutions Resources Programs	
Food and nutrition	3,789
Food safety	2,064
Rural development	7,846
Insects affecting man	212
Research on research management	2
Competition, Trade Adjustments and Price and Income Policy	
Farm adjustments necessary to increase farm income	1,283
Marketing and competition	5,279
Penalty Mail ..	264
Federal Administration	2,332
GRAND TOTAL	<u><u>91,438</u></u>

1/ Includes Water Pollution Research.

2/ Includes Activities to Reduce or Avoid the use of Pesticides.

Selected Examples of Recent Progress: Recent accomplishments under this appropriation are cited below:

Natural Resources

Environmental Quality

Reducing Pesticide Use on Cotton

Research at the Texas Pecos Experiment Station from 1968 through 1970 has demonstrated that costs of cotton insect control can be reduced by a factor of 50 to 1 or more by proper scouting techniques and management. During the three-year period the station expended only \$1.30 per acre for insecticidal treatment of cotton while the average producer spent from \$65 to \$95. In fact, only one pound of methylparathion per acre was applied in 1968, while growers made 24 to 36 treatments during the three-year period. Good crop management, including a diversified cropping system, contributed to successful production at the station.

Effects of Cultivation on Insecticide Residues

University of Wisconsin research extending over 12 years shows that cultivated soils contained 76 to 82 percent less residues from applied (large) amounts of aldrin and heptachlor than the non-cultivated soils. Most of the residues changed to other compounds or volatilized. There was little if any movement out of the soil into ground water.

Municipal Waste Water Found Suitable for Irrigation

There is considerable interest in putting municipal waste water on the land to reduce the amount of pollutants reaching waterways. Experiments have been conducted by the Arizona Agricultural Experiment Station over the past 14 years to study the effects of treated municipal waste water as a source of irrigation water and plant nutrients to produce agricultural crops. Soil irrigated with waste water had a lower infiltration rate, and more soluble salts, nitrates, and phosphates than soil irrigated with well water. Irrigation with waste water for 14 years did not decrease field crop yields or result in any adverse effects on Grabe silt loam that could not be corrected with minor changes in field crop culture. Agricultural lands appear to be a feasible site for the disposal of municipal waste water.

Nutrient Movement from Agricultural Land

The discharge of nutrients in drainage water from agricultural lands has been identified as a source of water pollution. Studies by the Florida Agricultural Experiment Station in citrus groves have shown that soil management practices can be modified to minimize nutrient losses. Deep tillage resulted in considerably less discharge of nitrate-nitrogen than did standard tillage practices. Discharge of potassium was also slightly less.

Nutrient Inputs to Streams from Fertilizers

Research conducted at Alabama A&M University provides information relative to nutrient inputs of nitrogen and phosphorus in the Tennessee Valley Area which are derived from fertilizers applied to cotton, corn, and soybeans.

The slow release nitrogen fertilizer used in the study showed no evidence of being superior to the conventional source (ammonium nitrate) in reducing nitrogen loss to the surface runoff from cotton, soybeans, and corn. Loss of nitrogen as nitrate nitrogen was less for corn than for cotton or soybeans indicating that the type of crop grown was most effective in reducing nitrogen and phosphorus losses. The most serious loss of nitrogen occurred as organic and nitrite nitrogen, a major component of sediment. It appears that the effective control of nitrogen and phosphorus loss from cropland will require that the efficiency of the crops as a nutrient absorber be considered along with methods which control sediment lost.

Harvesting Lake Weeds

Weeds and algal growth inhibit recreation activities on many lakes in Wisconsin. State Agricultural Experiment Station scientists are developing promising methods to alleviate the problems. Harvesting the troublesome lake weed Eurasian Water Milfoil is proving to be the best alternative to use of herbicides for biological control. Three harvests annually have nearly eliminated the plant from lakes under study. Engineers have developed a self-propelled barge with underwater cutter bar, porous conveyor and dewatering technique to prepare the material as a soil conditioner and/or protein concentrate for animal feed.

Reclaiming Nutrients in Swine Waste

Research at Illinois indicates waste from swine operations can be recycled and fed back as a part of the ration. The Illinois scientists found that the nutritive value of fresh manure in oxidation ditches in confinement units was enhanced by the microbial populations in the ditch. The settled solids from the ditch contained 27.7 percent protein. Feeding trials with experimental animals suggest that this protein may be utilized to provide a substantial reduction in protein usually obtained from sources such as soybeans. In addition to providing an additional source of nutrients, this process would help to alleviate a waste disposal problem.

Forest Resources

Environmental Impacts of Timber Harvest Along Streams

Studies have been made in Oregon of the occurrence of debris in undistributed old-growth stands and after conventional logging along streams. Results show that the volume of large-size residue in the form of tree tops, broken chunks and cull logs was greater by more than three times after conventional logging. Only small increases in volume of large-size residue were observed in study areas along streams after logging where a narrow, five-meter buffer of trees was left between the clear-cut boundary and the stream. No increases in residue were observed where the buffer width was extended to 50 meters. Finely divided residues of needles and other organic material were four times greater in volume in logged areas along streams even after the tree tops and limbs were pulled away. Some effects of the large-size residues are aggravated downstream flood damage to roads and other improvements, scouring of stream channels, alteration of fish habitat, and lowered water quality. In closely related research, also at Oregon State University, it has been shown that the finely divided residues from logging have long-term biochemical oxygen demand (B.O.D.). The results from these companion studies have been integrated for the creation of a model of oxygen depletion from alternative logging systems. The conceptually developed logging systems also can be tested to determine their reliability and cost of operation.

Clearcutting Effects on Wildlife Habitat

Wildlife food productivity analysis in Mississippi has demonstrated favorable results for several species of birds, deer, and small mammals. The fourth year after clearcutting produced the most satisfactory rabbit habitat, with indications of twice the utilization on clearcut areas. Small mammals, quail, dove, and song-bird populations increased spectacularly in the first years after clearcutting. Available food for deer on uncut interior flatwood forests was found to be 50 pounds per acre of dry weight in the summer. In contrast, production by loblolly pine plantations on clearcut areas was found to be more than 100 pounds per acre dry weight. A much more critical difference was observed during winter months. Uncut areas produced less than five pounds compared to pine plantations which produced 94 pounds in the first year and 80 pounds in the second year. Squirrel populations were noted to decrease in clearcut areas.

Accelerated Timber Production

Results of applications of nitrogen, potassium, and phosphorus to Western larch trees indicate that the rate of growth of this important timber species can be increased markedly in Montana forests. Comparisons of diameters and heights, foliar nitrogen, and potassium and phosphorus contents of more than 500 trees in 13 locations show 7 to 45 percent greater values for treated than for untreated trees. Good correlations between fertilizer application, growth increases, and foliar content were obtained.

Crop Resources

Disease and Insect Pest Control

Citrus "Stubborn Disease"

California station pathologists have isolated a "mycoplasma-like organism" (MLO) as the cause of "stubborn disease", one of the most serious and widespread affecting citrus. The pathologists estimate that now about a half-million, possibly more, infected and unprofitable trees should be removed and replaced with healthy stock to check the spread.

Stem-pitting of Stone Fruits

In 1968, an unidentified disease struck young and mid-age peach orchards in certain mid-atlantic and northcentral peach production States. The following year the continued spread and intensification of the disease dictated a concerted interstate effort to determine the cause and to find a solution to the problem. Plant virologists from the State Agricultural Experiment Stations and USDA combined efforts to determine that the causal agent is a virus and that soil-borne aspect was apparent. It was also discovered that some planting stock carried the virus, and corrective measures were taken, resulting in a marked reduction in disease severity in both peaches and cherries in 1971 and 1972.

Non-Chemical Control of Pests

Considerable progress has been made during the past year on the development of biological control agents. Predators, parasites and microbial agents have been either introduced or indigenous populations discovered and manipulated for effective control mechanisms in integrated pest management systems.

Research in Hawaii has shown that the presence of Euphorbia weeds around sugar cane fields is related to the abundance of Lixophaga spenophori parasites of the sugar cane weevil. Nectar flow from Euphorbia weeds appears necessary for parasite nutrition. Normally, herbicides are used to control Euphorbia weeds.

Scientists at the California Station have demonstrated that components of casein acid hydrolysate containing a mixture of free amino acids strongly attract the predator Chrysopa carnes. The amino acid requirements of Chrysopa and the attraction to amino acids has been found to be related to the symbionts that have evolved with Chrysopa.

Research at a number of locations including Colorado, Utah, Idaho, Washington, and Arizona with coordination from California, has found food sprays useful in moving and managing predator populations in areas where biological control is required. It has been found that in order to maintain Chrysopa predators, it is usually necessary to feed them by supplementary methods. The predator food sprays are being used commercially in cotton and green peppers.

Guidelines have been developed in Utah for the production of alfalfa that will reduce the insecticide applications to forage alfalfa and avoid most of the direct damage to parasites and predators by the remaining treatments.

Scientists at Arizona have shown that single-row strips of alfalfa interplanted in cotton help reduce lygus bug population levels in cotton and provide the habitat for large predator populations of lygus bugs. Similar results are also being obtained in California and Arkansas.

Studies in California have produced promising results for biological control of spider mites. Predaceous thrips, predaceous mites, and bacterial exotoxins all warrant further study.

Virginia has established a parasite introduction laboratory. A weevil, Rinocyllus conicus, which attacks the heads of musk thistles has been released in Virginia. The weevil larvae chew in the heads of the thistles causing the seeds to abort, thus reducing the musk thistle population.

A number of States, (Texas, California, Mississippi, Arkansas, North Carolina and Alabama) have been coordinating research studies evaluating the effectiveness of Heliothis virus on Heliothis in cotton. Mississippi, California and Arkansas have shown that the alkaline pH of dew on cotton will deactivate the Virus. Mississippi has developed a cotton seed oil adjunct to the Heliothis virus spray that apparently protects the virus from alkaline pH.

Pheromone research at the New York Station has demonstrated that pheromone traps for red-banded leaf roller will suppress the pest population when used over a large area to overcome migratory pressures.

Boll weevil pheromone has been successfully used in Mississippi in conjunction with an early planted cotton trap crop, treated with systemic insecticide. This technique has resulted in the early season manipulation and destruction of boll weevil. The boll weevil can now be reared in mass numbers for large area sterile releases and other research projects requiring large numbers of boll weevils. A new boll weevil mass rearing facility has been completed, equipped and placed in operation at the Mississippi Agricultural Experiment Station.

Crop Varieties and Production Systems

Pelican: A New Root-Knot Resistant Tomato Variety

A new tomato variety that produces large, high-quality fruit and is resistant to root-knot nematodes was released by the LSU Agricultural Experiment Station this year. The new variety, formerly known by its seedling numbers, L210, was named "Pelican." The new variety produces vigorous plants with thick stems and dense foliage. Fruit of Pelican have a firm flesh and thick, meaty outer and inner walls. This variety generally does not have as many seeds as other varieties. Fruits are of pleasing texture and flavor. Although no tomato variety is immune to fruit cracking, especially in rainy seasons or in a dry period followed by rains, Pelican is the most fruit crack resistant variety ever released and recommended to Louisiana growers. Pelican is recommended especially in areas where root-knot nematodes and fusarium wilt are found in the soil.

DAL Oats Has Higher Protein

The first oat variety purposely bred for higher protein was recently developed at the University of Wisconsin. The new variety, Dal Oats, averages around two percent higher protein content than other commercially available varieties. Normally oat groats (the kernel without the hull) contain around 16 percent protein. Oat protein content has decreased somewhat in recent years as breeders have emphasized other characteristics. Dal oats has more leaf rust resistance than any other variety commercially available for planting in the north central area of the nation. It has satisfactory yields and bushel weight.

Management of Alfalfa Leaf Cutter Bees

Studies at the Colorado and Washington Experiment Stations on the alfalfa leaf-cutter bee offer new management hints for this highly efficient pollinator. This bee was introduced accidentally from Europe during the 1930's and holds promise of being 100 times more effective for seed setting than the honey bee. Proper nesting units comprise one of the more important management factors. A Colorado Station Bulletin 552S is now available to the public for instructions. The Washington work has concerned the hazard of plant-systemic insecticides, which can be reduced or eliminated by proper application practices. Raising alfalfa-leaf cutter bees offers an additional source of income for interested individuals and communities.

Mechanical Harvesting of Mushrooms

A harvester consisting of an oscillating saw or cutterhead and airstreams and an air suction chamber to pick up the cut mushrooms and move them to a storage bin has been developed by Pennsylvania Experiment Station engineers. This is an important step toward complete mechanization of the \$55 million mushroom industry in that State. Harvesting is the only major phase still lacking mechanization.

Quality of Mechanically Harvested Grapes

Although mechanical harvesting of grapes is on the increase, the Concord grape industry in Arkansas has imposed an eight-hour limit on holding time from harvest to plant delivery for mechanically harvested grapes. This limit was necessary to insure juice of high quality. To solve this problem, Arkansas food scientists sprayed mechanically harvested grapes with various concentrations of potassium metabisulfite solutions. Results indicate it is possible to extend the eight-hour limitation if potassium metabisulfite were added to the juice at the rate of 40 to 80 parts per million of sulfur dioxide.

Compounds Responsible for Cantaloupe Flavor

Scientists at the University of Kentucky have found over 40 compounds, some as yet unidentified, are responsible for the flavor of cantaloupes. This information will be used to breed cantaloupes with better flavor and to measure the effects of cultural conditions and degree of maturity on cantaloupe flavors.

Own or Lease Farm Equipment

Most farmers agree that one of the largest expenses in crop production is the cost of owning and operating farm machinery. Scientists at the Mississippi Station made a study in the Mississippi Delta to identify and estimate costs that are important to the decision of whether to own or lease, and to determine under what conditions leasing or renting is more economical than owning. Farm ownership of tractors with some supplemental renting on an hourly basis during peak work periods was found to be less costly than leasing tractors under present cost conditions. At current costs, leasing tractors on an annual basis was found to be desirable only when investment capital is limited to the extent that a down payment cannot conveniently be made, but when adequate operating capital is available for lease payments which are less than a down payment. However, there appears to be a place for tractor rentals on an hourly basis to meet peak tractor requirements, particularly if a driver is furnished by the lessor.

Animal Resources

Meat Animals

Feedlot Cattle Disease Identified

Relatively new management methods for large-scale beef production in feedlots has led to disease problems previously unrecognized or of minor importance. One of

these is a serious nerve disorder referred to as polioencephalomalacia. Kansas scientists have now identified this disorder as a deficiency of thiamine. Treatment of affected animals has lead to rapid recovery.

Cause of Swine Dysentery Identified

A breakthrough has been made by Iowa scientists in determining the cause of a widespread, costly disease known as swine dysentery. The causative agent is a newly recognized organism named Treponema hyodysenteria by its Iowa discoverers. They found that the organism acts together with Vibrio coli to cause swine dysentery. The Iowa study which led to this breakthrough was part of a cooperative regional effort by a number of North Central States seeking to reduce swine disease losses due to intestinal diseases.

Vaccine for Control of Livestock Parasites

Internal parasites cause poor gains, reduced efficiency in the utilization of feeds, and often result in illness and death of livestock. A cooperative regional study involving ten States and the USDA is seeking to develop biological methods which will reduce the need for chemical controls for these parasites. Scientists at Colorado have now made significant advances in determining how parasite vaccines may be utilized to be most effective. Their studies show that immunity is produced only when certain stages of the parasite are incorporated into vaccines. Adult parasites, for example, produce no immunity. Further, the method (beneath the skin, orally, etc.) of administering the vaccine to animals is an important factor in the degree of its effectiveness. These principles will provide important steps toward the final development of practical, effective vaccines for livestock parasites.

Virus Causes Abortion in Cattle

A parainfluenza virus widely prevalent among young adult cattle has been shown capable of causing fetal death by a scientist at Wyoming. Parainfluenza-3 virus for many years has been associated with costly losses due to pneumonia in beef cattle after they arrive at feedlots to be finished for market. Acting on careful field observations, controlled studies confirmed the ability of the virus to damage or kill fetuses of exposed breeding cattle during the first 1/3 of the gestation period. Work is continuing to evaluate the relative frequency with which parainfluenza-3 abortion occurs and to prevent its occurrence.

Sheep Reproduction Research

Efficient sheep production through the control of the time of breeding and lambing in range country is a goal of hormone research by scientists in Wyoming, who have recently perfected the autotransplantation of the reproductive tract of sheep. By relocating the entire female reproductive tract under the loose, elastic skin of the neck, observations and samplings heretofore impossible, can now be readily performed. The technique is so new that it has been successfully performed at only one other laboratory in the world. Answers may now be forthcoming to permit the use of hormones at the exact time and in the correct amount to reliably control sheep reproduction.

Meat Quality

A method, Tenderstretch, has been developed by Texas scientists that improves the tenderness of many of the larger more economically important muscles of the loin and round from which the most desirable steaks and roasts are obtained. The method consists of suspending the carcass in such a manner as to prevent the shortening of muscle fibers as the carcass passes into rigor mortis. Variation in tenderness among animals still exists, but both objective and subjective measurements of tenderness confirm the beneficial effects of the new method.

Dairy Animals

Cellular Immunity to Mastitis

Specialized cells of tissues and blood have been shown by State Experiment Station scientists at Wisconsin and California to perform immune protective functions in bovine mastitis. The California study also identified serum bactericidins active in resistance of the mammary gland to mastitis bacteria. The new knowledge is especially important because methods used to improve or stimulate cellular immunity are different from methods for raising the more familiar serum anti-bodies. The new line of research opens many possible new avenues of approach to mastitis control and prevention.

Reproductive Hormones in Dairy Cattle

A major advance in understanding the hormonal mechanisms of reproduction in dairy cattle has been made by scientists at the State Agricultural Experiment Stations at New York, Indiana, Massachusetts, Vermont and New Jersey. Working as members of a Northeast Regional Technical Committee, special techniques and facilities available at these laboratories were focused on the pin-pointing of exact times of natural release into the bloodstream of precisely measured amounts of reproductive hormones. The unprecedented, intensive study took advantage of new, sensitive analytical methods available only recently. New knowledge resulting from the study now provides a more rational basis for the use of short-acting hormone treatments to increase the number of dairy calves born and total annual milk production.

Poultry

Genetic Mechanisms of Resistance in the Chicken to Leukosis Pathogens

The dogma that malignant tumors do not regress spontaneously has been refuted by a genetic selection experiment at the University of Arkansas. Rous sarcoma virus produces a sarcoma in the chicken which usually progresses in growth until it kills the chicken. A special strain of chicken consisting of White Leghorn and Jungle Fowl blood has been selected for resistance to these tumors. The type of resistance is unique and may have a special meaning for research workers in human cancer. The chickens develop malignant tumors which proceed to grow to various sizes then growth stops and the tumor diminishes in size until it completely disappears with no residual blemish. There is no recurrence of the tumor. In addition, when a spontaneous regression of a Rous sarcoma occurs, it is always accompanied by a strong immunity to induction of a second sarcoma.

People, Communities, and Institutions Resources

Food, Nutrition and Food Safety

Improving Nutrition

A data bulletin, Southern Cooperative Series Bulletin No. 170 (1971), has been published on metabolic patterns in pre-adolescent children. Subjects with controlled vitamin deficiencies were given amino acids or calcium supplements to test their efficacy in improving nutritional status. Anthropometric and clinical data were collected and presented by subject for selected day intervals. The bulletin includes a description of how the study was conducted, daily menus, consent forms, record of illnesses, as well as food and nutritional data. It offers a helpful guide to other research in experimental design and variations among individuals in a natural population.

Scientists at the Delaware station have surveyed the nutrition of preschool children from families with medium income (\$10,000-\$15,000). Green and leafy vegetables appear to be a problem in dietary intake. There is a favorable association between

nutrition knowledge of the homemaker and attitude toward the pre-schooler's nutrition. However, there is no significant association between nutrition knowledge of the homemaker and attitudes toward meal planning, food preparation, and adequacy of diets.

Maine station scientists surveyed pre-school children from Headstart families receiving food assistance and others from families with middle income. There was no significant difference in physical measurements of the two groups. Hence, clinical measurements are essential to identify the nutritional problems that may exist.

Broiler necks were studied by Pennsylvania station scientists as a practical source of low cost protein. Evaluation of yield and nutritional value have been made for raw, cooked, mechanical and hand deboning. Meat and skin represent 63 percent of the whole neck; meat represents 19 percent. Considerable skin is removed in deboning, thereby, increasing the percent of protein in the deboned product. Protein compares favorably with turkey, chicken, beef, pork, milk, eggs. Lysine values compare favorable with whole milk powder, meat, and fish meals.

The Vermont station scientists have investigated the comparative utilization of casein-lactalbumin and spun soy protein, using human subjects. The amino acid patterns were adjusted to equal the FAO provisional standard and used as a part of the controlled dietary regime, for male college students. Five parameters of utilization by the body were measured over 10-day periods. Under these conditions, spun soy protein and casein-lactalbumin were equally well utilized. This supports the premise that use of low-cost protein in human diets need not be at the expense of reduced nutritive value.

Processed Foods Acceptable in Food Services System

The number of meals served by public and private food service systems is increasing rapidly. To insure their continued success, food service establishments must find acceptable food products in sufficient variety and high in quality to satisfy their customers. Ohio station scientists have found that satisfactory meals can be preassembled, frozen and held for reheating prior to serving by using freshly mashed potatoes and prefrozen peas as meal components. Portion size, quality, acceptability, operational feasibility and costs were critical factors in determining suitability of meal components. Ohio Research Circular 184.

Process for Recovery of Peanut Proteins.

Investigations of the feasibility of recovering food grade protein concentrates and isolates directly from peanuts by Texas station scientists has resulted in development of two successful processes. The two methods have been successful in laboratory and pilot plant tests. Processing parameters have been worked out and factors responsible for losses of oil, yield and protein solubility determined.

Sunflower Food Products

Research at the Texas station has shown that dehulled sunflower kernels and de-fatted sunflower meal can be used in human food formulations. Whole sunflower kernels are acceptable as a nut substitute in bakery and confectionery products. High protein tortilla chips, textured vegetable protein fibers and bread made from the meal are acceptable. This new protein source can be used to enhance the protein food supply, which is particularly short in the developing countries.

Intermediate Moisture Foods

Cornell food scientists inoculated various food systems with Pseudomonas aeruginosa and Staphylococcus aureus and vacuum dried them to different moisture contents in the intermediate moisture range. Sorption isotherms and bacterial growth curves at the various water activities were correlated with food texture. Results generally agree with earlier work done on model systems and indicate that none of the

foods studied could be considered microbiologically stable intermediate moisture foods of acceptable texture. Production of intermediate moisture foods of the type investigated by dehydration alone, may not be feasible. Other approaches must be sought.

Rural Development

Irrigation Development Shows Promise for Indians

The New Mexico Station is making a study of a 110,630 acre irrigation project being developed in Northwestern New Mexico. The first 10,000 acre block is expected to be available for farming in 1975. The most profitable cropping patterns and live-stock use, the feasibility of a vegetable canning industry, and the effects of alternative organizational arrangements on income, employment and capital requirements are being determined. In view of the limited commercial farming experience, training, and capital resources of the Navajos, it will be advisable, at least initially, to develop the project on the basis of tribal enterprise farms. The project would require inputs of approximately 55 million dollars over a 10-year period and annual operating capital of 30-40 million when fully developed. It is expected to provide jobs for more than 2,300 individuals at peak labor periods. When fully developed farm labor income should exceed 9 million dollars annually. The project is expected to gross 40-50 million dollars or net an income of 10 million to the tribe annually. This income would help pay for the project as well as other social and economic programs of the tribe.

Study Contributes to Environmental Quality Legislation

The New York Station analyzed the problem of environmental conflicts in rural areas. Areas of long-time established agricultural enterprises are being surrounded and encroached upon by non-farm residents as neighbors. At the same time, agricultural technology has provided new techniques of concentration and specialization. These various processes have set farm and non-farm interests on a collision course because of the problem of waste disposal with agricultural enterprises having large concentration of poultry or animals. The study showed that there are clear needs for local governments to adopt land use and zoning policies to forestall and prevent such inevitable conflicts in competing uses and management of enterprises. The study contributed significantly to the 1971 State enactment of legislation for the formation of agricultural districts. These districts are intended to reduce rural conflict and promote wise allocation and use of rural land and many have now been established in the State.

Water Control Research Results in Many Benefits

Research at the Texas Station shows that, (a) recreational uses of water impounded in flood control and multi-use structures have exceeded expectations, (b) flood control benefits in urban areas have been substantially underestimated, and (c) other differences in projected and realized benefits and costs exist and are significant, however, construction costs for flood control structures have generally exceeded estimates of planners, and projected benefits from changed uses of flood plain lands in agriculture have not materialized.

Many Seasonal Home Occupants Opposed to Increased Taxes for Environmental Improvement

A study by the Delaware Station dealt with attitudes of seasonal home occupants towards the environment. The occupants were concerned about environmental degradation in their communities due to the influx of people and were in favor of limited future growth. While aware of existing problems such as lack of sewage treatment or the need for other local services, a bare majority (53%) was willing to pay increased taxes to remedy the problem. This concerns local public officials who desire to change growth and development policies. The majority of the occupants sampled were out-of-State residents, and were from the professional-

technical and managerial occupations or were retired. Their average education was 14.3 years and more than a third had incomes exceeding \$20,000. The study also indicated that water pollution had closed shellfishing areas in the surrounding bays with an undetermined loss to recreational clamming.

Dairy Workers Would Like An Improved Job Image

A study at the New York Station indicates the importance of job image in recruiting hired workers is recognized among dairy farm operators and that there is some consensus on what contributes to a good job image. Putting this knowledge to effective use is a major problem to most dairy farmers. Job titles, hours of work, length of work week, time off and vacation, pay levels, supervision, interworker relationships, level of responsibility and involvement in working conditions all were found to contribute to job image. However, employers use titles that describe and recognize degree of skill and give status. Length of work week continues to average from 50 to 100 percent longer than most kinds of work. Pay levels are admittedly low, yet gross pay is considered by the workers as a plus feature of their job compared to nonfarm jobs of similar skill level. Most dairy farm workers get some time off, but only about two-thirds get vacations, a negative feature. Supervision practices were found to be variable, irregular, and inconsistent, reflecting the lack of standardization of job duties and responsibilities in the job title. In general, an alternative to the family or paternalistic model is needed for an improved and harmonious relationship between employer and employee on dairy farms.

Career Aspirations in Agriculture Low Among Hawaii Youth

A study at the Hawaii Station shows that career aspirations and expectations of youth, in terms of prestige, tend to be lower among students in rural and public schools than in private schools. The same is true concerning the prestige levels of the parents' occupations. Although 5.5% of the parents throughout the State were engaged in agriculture, only 1.6% of their children aspired to agricultural occupations, whereas only .5% expected to enter such endeavors. Rural versus urban comparisons yielded no difference for agricultural aspirations, but significant differences occurred with regard to expectations. Perceived obstacles of financial capital on the part of urban youths probably account for fewer of them expecting to enter into agriculture.

Research on Specific Kinds of Home and Financial Management Services Needed

Research was conducted at Tennessee State University to determine whether there was a common element of home management peculiar to a selected group of Negro families in two counties, Fayette and Haywood, in West Tennessee.

The findings in this study indicated that Negro families in Fayette and Haywood Counties, Tennessee have an urgent need for assistance from local, State and Federal agencies and organizations in dealing with their home management practices and financial problems.

The major problems confronting the families seem to stem from the lack of adequate employment which would provide the necessary funds to secure the supplies and services needed. The lack of education and/or apprentice training which would prepare the adults to meet specific job requirements also prevents self-improvement through the reading of newspapers, magazines, etc., and limits communication. The families are, therefore, unaware of the availability of services through local, State and Federal agencies and organizations, and procedures for obtaining and utilizing these services in the solution of their problems.

Competition, Trade Adjustments and Price and Income Policy Resources

Marketing and Competition

High Moisture Corn Unduly Discounted in the Market Place

Researchers at the University of Illinois have found that under the present market grading system high moisture corn is being unduly discounted, often by 3 to 4 cents per bushel more than is justified. Not only is high moisture corn discounted for excessive water content, but also it is being given a lower grade than justified. This has arisen from the failure of the marketing system to recognize that the test weight of a bushel of high moisture corn rises with drying. The Illinois Experiment Station has alerted farmers to this fact and has supplied elevator operators with tables showing the test weight that high moisture corn can be expected to have when dried.

With the increase in field shelling corn, the economic significance of this research finding runs into millions of dollars and it is also a matter of equity in the marketing system.

Long-Range Outlook Regarding Consumer Demand Increasingly Important

The California Agricultural Experiment Station recently completed and published an outstanding study entitled: "Consumer Demand for Food Commodities in the United States with Projections to 1980." In addition to projecting demand, this study identified the major factors affecting prices of 35 foods and, using the latest advances in economic methodology and computers, quantified their relationship to price behavior in the market place. This advance in knowledge will be very useful in economic outlook work. Accuracy in long-range outlook work is becoming increasingly important as capital requirements and enterprise specialization increases in the U. S. agriculture.

Teletype Auctions Can Reduce Marketing Costs Dramatically

Research at the Nebraska Agricultural Experiment Station has shown how the yearly cost of marketing cattle in the nation can be reduced by 1 to 1.6 billion dollars.

The research showed that some farmers are still using high cost marketing systems where the cost is as high as \$14.28 per head when far less costly channels are currently available. The national teletype auction system that the Nebraska Station has developed and has tested by simulation techniques would reduce the cost to \$3.38 per head and would improve equity for buyers and sellers, especially the small family farmers who are not well informed on markets.

Teletype auctions are already successful operations in some parts of the country and have reduced marketing costs substantially but this research effort has now shown how these separate auctions can be integrated into a far more efficient and equitable national marketing system.

EXTENSION SERVICE

Purpose Statement

Cooperative agricultural extension work was established by the Smith-Lever Act of May 8, 1914, as amended. The legislation authorizes the Department of Agriculture to give, through the Land-Grant Colleges, instruction and practical demonstrations in agriculture and home economics and related subjects and to encourage the application of such information by means of demonstrations, publications, and otherwise to persons not attending or resident in the colleges. Extension educational work is also authorized under the Agricultural Marketing Act of 1946 and the Rural Development Act of 1972.

The basic job of the Cooperative Extension Service is to help people identify and solve their farm, home, and community problems through use of research findings of the Department of Agriculture and the State Land-Grant Colleges, and programs administered by the Department of Agriculture.

State and county extension work is financed from Federal, State, County, and **local sources**. These funds are used within the States for the employment of county agents, home economics agents, 4-H Club agents, State and area specialists, and others who conduct the joint educational programs adapted to local problems and conditions.

The Extension Service, as a partner in the cooperative effort, has three major functions:

1. Serves as liaison between the Department of Agriculture and the States, provides program leadership and assistance to the States in the conduct of Extension work.
2. Administers Federal laws authorizing Extension work and coordinates the work among the States.
3. Provides leadership for the educational phases of all programs under the jurisdiction of the Department.

This work is carried out through State and County Extension offices in each State, Puerto Rico, Guam, the Virgin Islands, and the District of Columbia. This program is coordinated by an Extension Service staff located in Washington, D. C. In addition, the Extension Service has a marketing specialist located at Clemson, South Carolina, to provide special emphasis on cotton utilization and a cotton ginning and mechanization specialist located at Memphis, Tennessee.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

	Actual 1972		Estimated Available 1973		Budget Estimate 1974	
	Amount	Years	Amount	Years	Amount	Years
Extension Service.....	\$172,279,000	218	\$194,331,000	212	\$196,831,000	195
Salaries and expenses,						
Farmers Home Admini-						
stration.....	50,000	- -	100,000	- -	100,000	- -
Resource Conservation						
and Development, Soil						
Conservation Service-						
(program information)..	427,000	- -	427,000	- -	256,000	- -
Total, Agricultural						
Appropriation Bill....	172,756,000	218	194,858,000	212	197,187,000	195
Other Funds:						
Office of Civil Defense,						
Department of Defense,						
rural shelter educa-						
tion and training.....	300,000	2	250,000	3	250,000	3
Department of Justice -						
Marijuana Eradication..	10,000	- -	- -	- -	- -	- -
Military Construction -						
Safeguard Community						
Impact Assistance.....	48,650	- -	39,700	- -	- -	- -
Agency for International:						
Development:						
Training for foreign:						
participants.....	94,329	5	96,475	4	96,475	4
Technical Consulta-						
tion.....	94,218	4	97,315	5	97,315	5
Special Projects:						
principally instruc-						
tion in modern agri-						
cultural production						
methods in Vietnam..	1,166,412	40	594,548	17	311,965	9
Other.....	47,386	1	51,721	2	51,721	2
Total, Agency for Inter-						
national Development..	1,402,345	50	840,059	28	557,476	20
Bureau of Indian Affairs,						
Department of the In-						
terior--extension work:						
with Indians.....	53,537	2	56,100	2	56,100	2
Miscellaneous Reim-						
bursements.....	77,804	2	138,089	1	138,930	1
Total, Other funds..	1,892,336	56	1,323,948	34	1,002,506	26
Total, Extension Service..	\$174,648,336	274	\$196,181,948	246	\$198,189,506	221

EXTENSION SERVICE

Appropriation Act, 1973	\$194,331,000
Budget Estimate, 1974	<u>196,831,000</u>
Increase in Appropriation	+2,500,000

SUMMARY OF INCREASES AND DECREASES
(On basis of adjusted appropriation)

	<u>1973</u>	<u>Increase or Decrease</u>	<u>1974 Estimate</u>
Payments for Cooperative Agricultural Extension Work:			
Cooperative Extension work under section 3(b) and 3(c) of the Smith- Lever Act	\$107,451,000	-\$2,542,000	\$104,909,000
For Nutrition Education Program	50,560,000	-3,200,000	47,360,000
For Rural Community Development	2,000,000	-1,000,000	1,000,000
Extension Education Program under Rural Development Act, Title V	- -	+2,500,000	2,500,000
Penalty Mail	7,617,000	+6,742,000	14,359,000
All Other	<u>26,703,000</u>	- -	<u>26,703,000</u>
Total Available	<u>194,331,000</u>	<u>+2,500,000</u>	<u>196,831,000</u>

PROJECT STATEMENT
(On basis of adjusted appropriation)

Project	1972	1973 (Estimated)	Increase or Decrease	1974 (Estimated)
I. Payments to States, Puerto Rico, Guam, and the Virgin Islands:				
(a) Cooperative Agricultural Extension Work under Sections 3(b) and 3(c) of Smith-Lever Act:				
(1) Program	92,817,217	105,593,760	-2,440,320	103,153,440
(2) Set aside for Federal Administration (4%)	<u>1,341,240</u>	<u>1,857,240</u>	<u>-101,680</u>	<u>1,755,560</u>
Total	94,158,457	107,451,000a/	-2,542,000	104,909,000
(b) Retirement and employees' compensation fund costs for extension agents	12,592,099	13,407,000	- -	13,407,000
(c) Penalty Mail for Extension Agents and Extension Directors	<u>3,617,000</u>	<u>7,617,000</u>	<u>+6,742,000</u>	<u>14,359,000</u>
Subtotal	110,367,556	128,475,000	+4,200,000	132,675,000
(d) Payments under Section 3(d) of Smith-Lever Act:				
(1) Nutrition and Family education program ..	48,483,934	50,560,000	-3,200,000	47,360,000
(2) Grants to 1890 Land-Grant Colleges and Tuskegee Institute ..	3,939,300	6,000,000	- -	6,000,000
(3) Rural Development ..	1,000,000	2,000,000	-1,000,000	1,000,000
(4) Pest Management	- -	500,000	- -	500,000
(5) Cotton Program	<u>500,000</u>	- -	- -	- -
Subtotal	53,973,234	59,060,000	-4,200,000	54,860,000

Project	1972	1973 (Estimated)	Increase or Decrease	1974 (Estimated)
(e) Cooperative Marketing Extension Work under the Agricultural Mar- keting Act	1,449,963	1,450,000	- -	1,450,000
(f) Cooperative Extension Work in the District of Columbia:				
(1) Program	768,000	768,000	- -	768,000
(2) Set aside for Federal Administration (4%)	32,000	32,000	- -	32,000
Total	800,000	800,000	- -	800,000
(g) Extension Education Program under Rural Development Act, Title V:				
(1) Program	- -	- -	+2,400,000	2,400,000
(2) Set aside for Federal Administration (4%)	- -	- -	+100,000	100,000
Total	- -	- -	+2,500,000 (1)	2,500,000
Total, Payments to States, Puerto Rico, Guam and the Virgin Islands	166,590,803	189,785,000	+2,500,000	192,285,000
Federal Administration and Coordination (Direct appropriation)	4,581,034	4,546,000	- -	4,546,000
Unobligated Balance	1,197,163	- -	- -	- -
Total Available or Estimate	172,279,000	194,331,000a/	+2,500,000	196,831,000

a/ Of this amount, \$53,500 has been withheld from use in 1973 principally from funds budgeted for travel.

(1) An increase of \$2,500,000 consisting of:

(a) An increase of \$6,742,000 for increased costs of penalty mail (\$7,617,000 available in 1973).

Need for increase: Funds available for penalty mail costs cover the cost of mailings of State Extension Directors and Cooperative Extension agents. The fiscal year 1974 estimate includes costs of outstanding 1972 and 1973 postal bills owed to the Postal Service. Subsequent to the 1973 budget request, postal charges increased, resulting in a need for \$2,184,000 to reimburse the Postal Service in fiscal year 1972. In fiscal year 1973, as a result of the most recent usage survey in the States and the increase in postal rates, an additional \$2,279,000 is expected to be required. The cost in fiscal year 1974 is also anticipated to include a \$2,279,000 increase over funds available in fiscal year 1973 for a total of \$6,742,000 to fully reimburse the Postal service for all 3 years. The budget proposes to overcome the problem of funding unanticipated rate and volume changes in future years by including penalty mail funds with the funds distributed by formula, in the same manner that retirement costs are now funded. A language change for this purpose is included in this budget.

(b) To provide for the increased costs for penalty mail, other grants are being reduced by \$6,742,000 as follows:

Payments to States under sections 3(b) and 3(c)	-2,542,000
Nutrition and family education (This represents a reduction in grants to States from 1973 of only \$1.2 million as \$2 million of the amount available in 1973 was withheld for use in 1973)	-3,200,000

Rural development (This represents no reduction
in grants to States from 1973 as \$1 million of
the amount available in 1973 was withheld from
use in 1973) -1,000,000

(c) An increase of \$2,500,000 for payments to States for Rural Development
(no funds available in 1973).

Need for increase: Many rural areas are experiencing problems in providing opportunities for increased numbers of Americans to work and enjoy a standard of living comparable to citizens living and working in urban areas. A balanced national development program is needed to provide essential knowledge necessary for successful programs of rural development. The Cooperative Extension Service, with its long record of working with local people, has recognized capabilities in assisting groups to organize and effectively solve these problems at the local level.

Extension has for several years conducted activities in support of rural development using Smith-Lever funds under sections 3(b), 3(c) and 3(d). The proposed funding under the Rural Development Act of 1972 would enhance this ongoing rural development work.

Plan of work: The increase requested will be utilized to initiate the Extension component of joint Extension-Research pilot projects in each State to develop and demonstrate activities which are effective in solving rural development problems at the local level. An additional \$2.5 million is requested for the research component under the Cooperative State Research Service. These pilot projects will (a) be conducted in specific geographic or problem areas; (b) give priority to economic and social development, environmental improvement, community facilities and services, housing, and other areas as determined by the State; (c) give a primary emphasis to non-metropolitan areas in the State in which more than one university may be involved; (d) be based on a plan submitted by each State with such plans containing both Extension and research components designed to carry out the purpose of the project; and (e) will be supportive and complimentary to ongoing comprehensive planning and development efforts.

As provided under the Rural Development Act of 1972, Section 503, 4% of appropriations shall be used for Federal Administration, and 10% of appropriations will be made available to support programs of two or more States on high priority problems which can be more effectively handled through cooperative effort.

* * * * *

The following table summarizes the total funds available for Federal Administration for the Extension Service:

	<u>1972</u>	<u>1973</u>	<u>Increase or Decrease</u>	<u>1974 Estimate</u>
Set aside (4% of funds appropriated under Sec. 3(b) and (c) of Smith-Lever Act).....	\$1,341,240	\$1,857,240	\$-101,680	\$1,755,560
Set aside (4% of funds for payments to District of Columbia).....	32,000	32,000	- -	32,000
Set aside (4% of funds for Rural Development, Title V).....	- -	- -	100,000	100,000
Direct appropriation.....	<u>4,594,000</u>	<u>4,546,000</u>	<u>- -</u>	<u>4,546,000</u>
Total.....	<u>\$5,967,240</u>	<u>\$6,435,240</u>	<u>\$ - 1,680</u>	<u>\$6,433,560</u>

PAYMENTS TO STATES, PUERTO RICO, GUAM AND THE VIRGIN ISLANDS

Federal funds available for fiscal year 1973 under the appropriation "Payments to States, Puerto Rico, Guam and the Virgin Islands" for cooperative agricultural extension work under the Smith-Lever Act, the Agricultural Marketing Act, the D. C. Public Education Act, the Rural Development Act of 1972 Title V, Retirement and Employees' Compensation fund costs and Penalty Mail total \$189,785,000. Funds available for fiscal year 1974 are estimated at \$192,285,000.

Payments to the States, Puerto Rico, Guam and the Virgin Islands are made directly to designated offices and the funds are disbursed by them in accordance with budgets and programs of work submitted by the State directors of Extension work and approved by the Administrator of the Extension Service on behalf of the Secretary of Agriculture. As reflected in Table III, about 42% of the cost of Extension work at present is being financed from Federal sources and about 58% from State and local sources.

The funds are used by the States for the employment of Extension workers to carry on Cooperative Agricultural Extension work. Paid Extension workers are assisted by volunteer leaders who cooperate in carrying out Extension programs.

The use of these funds is indicated in greater detail in the following tables: Table 1 reflects estimated allotments to the States, Puerto Rico, Guam and the Virgin Islands under the formula provisions of Section 3(b) and 3(c) of the Smith-Lever Act. Supplementary Tables 1a, 1b, 1c and 1d reflect the estimated allotments for Nutrition Education, payments to the 1890 Land-Grant Colleges and Tuskegee Institute, payments for rural development under Section 3(d) (Non-formula) of the Act, and payments for rural development extension education under the Rural Development Act, Title V. Table II shows the basis on which the allotments will be made and the extent to which they must be matched by State and local sources. Table III indicates the sources of funds allotted for Cooperative Extension Work in the States, Puerto Rico, Guam and the Virgin Islands for 1973, including allotments under the Agricultural Marketing Act. Table IV indicates the various classes of field agents employed with Extension funds.

Table I

APPROPRIATION FOR PAYMENTS TO STATES
STATE ALLOTMENTS, FY 1973 - FY 1974

Smith-Lever Act: Sec. 3(b) and 3(c)2	FY 1973	Increase or Decrease FY 1974	Total Proposed for FY 1974
Alabama	\$ 3,237,033	\$ (-) 52,670	\$ 3,184,363
Alaska	314,856	- 12,077	302,779
Arizona	636,623	- 18,258	618,365
Arkansas	2,630,088	- 45,943	2,584,145
California	2,808,180	- 62,345	2,745,835
Colorado	1,032,458	- 27,351	1,005,107
Connecticut	722,146	- 23,061	699,085
Delaware	397,282	- 13,198	384,084
Florida	1,475,198	- 40,797	1,434,401
Georgia	3,455,704	- 60,912	3,394,792
Guam	299,286	- 10,381	288,905
Hawaii	509,180	- 12,181	496,999
Idaho	874,382	- 25,627	848,755
Illinois	3,424,051	- 91,185	3,332,866
Indiana	2,973,961	- 83,939	2,890,022
Iowa	3,153,183	- 88,698	3,064,485
Kansas	1,970,267	- 49,677	1,920,590
Kentucky	3,552,573	- 79,664	3,472,909
Louisiana	2,239,283	- 43,977	2,195,306
Maine	791,503	- 20,437	771,066
Maryland	1,178,147	- 32,527	1,145,620
Massachusetts	955,037	- 26,902	928,135
Michigan	3,157,589	- 81,780	3,075,809
Minnesota	2,987,738	- 83,371	2,904,367
Mississippi	3,417,335	- 54,841	3,362,494
Missouri	3,207,032	- 74,721	3,132,311
Montana	829,346	- 24,254	805,092
Nebraska	1,717,766	- 46,300	1,671,466
Nevada	325,664	- 11,737	313,927
New Hampshire	498,973	- 15,932	483,041
New Jersey	926,244	- 26,958	899,286
New Mexico	722,097	- 18,899	703,198
New York	3,039,536	- 77,452	2,962,084
North Carolina	4,962,972	- 101,218	4,861,754
North Dakota	1,201,562	- 32,571	1,168,991
Ohio	3,837,135	- 97,773	3,739,362
Oklahoma	2,232,094	- 43,595	2,188,499
Oregon	1,181,894	- 32,990	1,148,904
Pennsylvania	3,836,900	- 94,302	3,742,598
Puerto Rico	3,349,631	- 65,056	3,284,575
Rhode Island	332,035	- 11,644	320,391
South Carolina	2,572,521	- 45,905	2,526,616
South Dakota	1,213,048	- 34,193	1,178,855
Tennessee	3,595,465	- 73,789	3,521,676
Texas	5,165,796	- 93,294	5,072,502
Utah	572,219	- 15,870	556,349
Vermont	582,719	- 17,543	565,176
Virginia	2,981,140	- 61,411	2,919,729
Virgin Islands	288,727	- 10,085	278,642
Washington	1,436,500	- 38,403	1,398,097
West Virginia	1,771,424	- 34,575	1,736,849
Wisconsin	2,990,886	- 82,972	2,907,914
Wyoming	484,442	- 15,079	469,363
Subtotal	\$ 104,048,851	\$ (-) 2,440,320	\$ 101,608,531
Special Need Funds, Sec. 3(b) Smith-Lever Act	1,544,909	- -	1,544,909
Retirement & Employees' Compensation Costs	13,407,000	- -	13,407,000
Penalty Mail Costs (for Extension Agents and Directors)	7,617,000	6,742,000	14,359,000
Federal Administration and Coordination, Sec. 3(c)1 Smith-Lever Act	1,857,240	(-)101,680	1,755,560
Funds for Allocation, Sec. 3(d) Smith-Lever Act:			
Expanded Nutrition Program 1/	50,560,000	(-)3,200,000	47,360,000
1890 Land-Grant Colleges & Tuskegee 2/	6,000,000	- -	6,000,000
Rural Development 3/	2,000,000	(-)1,000,000	1,000,000
Pest Management	500,000	- -	500,000
Agricultural Marketing Act Funds	1,450,000	- -	1,450,000
Ext. Work under D.C. Public Eduo. Act, incl. Federal Administration	800,000	- -	800,000
Rural Development Act Funds 4/	- -	2,500,000	2,500,000
Total Smith-Lever, AMA, D.C. and Title V Rural Development Act	\$ 189,785,000	\$ 2,500,000	\$ 192,285,000

1/ See Table 1a.

2/ See Table 1b.

3/ See Table 1c.

4/ See Table 1d.

Table 1A

APPROPRIATIONS FOR PAYMENTS TO STATES
NUTRITION EDUCATION, FY 1973 - 1974

	Fiscal Year 1973	Decrease Fiscal Year 1974	Total Proposed for Fiscal Year 1974
Smith-Lever Act: Sec. 3(d)			
Alabama	\$ 1,624,856	\$ - 34,644	\$ 1,590,212
Alaska	138,920	- 3,649	135,271
Arizona	444,848	- 12,289	432,559
Arkansas	1,034,852	- 22,009	1,012,843
California	2,542,640	- 83,460	2,459,180
Colorado	440,477	- 12,289	428,188
Connecticut	357,440	- 10,344	347,096
Delaware	178,253	- 4,513	173,740
Florida	1,620,485	- 43,285	1,577,200
Georgia	1,769,079	- 37,129	1,731,950
Hawaii	208,846	- 4,945	203,901
Idaho	235,068	- 5,809	229,259
Illinois	1,703,523	- 44,257	1,659,266
Indiana	982,407	- 20,929	961,478
Iowa	746,405	- 14,341	732,064
Kansas	562,848	- 12,721	550,127
Kentucky	1,362,632	- 29,353	1,333,279
Louisiana	1,511,225	- 37,453	1,473,772
Maine	344,329	- 7,321	337,008
Maryland	676,479	- 16,933	659,546
Massachusetts	772,628	- 20,173	752,455
Michigan	1,445,669	- 33,133	1,412,536
Minnesota	811,961	- 17,365	794,596
Mississippi	1,401,965	- 31,189	1,370,776
Missouri	1,266,483	- 27,625	1,238,858
Montana	239,439	- 5,809	233,630
Nebraska	440,477	- 9,481	430,996
Nevada	134,549	- 3,973	130,576
New Hampshire	191,364	- 4,837	186,527
New Jersey	842,554	- 23,953	818,601
New Mexico	405,514	- 10,885	394,629
New York	2,673,752	- 77,089	2,596,663
North Carolina	2,092,488	- 39,829	2,052,659
North Dakota	283,143	- 5,809	277,334
Ohio	1,773,449	- 41,557	1,731,892
Oklahoma	851,295	- 19,849	831,446
Oregon	388,033	- 11,209	376,824
Pennsylvania	2,188,637	- 48,577	2,140,060
Puerto Rico	934,333	- 65,749	868,584
Rhode Island	243,809	- 6,133	237,676
South Carolina	1,262,112	- 24,817	1,237,295
South Dakota	318,106	- 6,889	311,217
Tennessee	1,624,856	- 33,781	1,591,075
Texas	3,399,238	- 79,465	3,319,773
Utah	243,809	- 6,781	237,028
Vermont	191,365	- 4,297	187,068
Virginia	1,388,854	- 28,381	1,360,473
Washington	536,626	- 14,989	521,637
West Virginia	803,221	- 16,717	786,504
Wisconsin	772,628	- 18,229	754,399
Wyoming	152,031	- 3,757	148,274
Reserve	2,000,000	-2,000,000	-0-
TOTAL	50,560,000	-3,200,000	47,360,000

Table 1b

APPROPRIATIONS FOR PAYMENTS TO THE 1890 LAND-GRANT COLLEGES
AND TUSKEGEE INSTITUTE, FY 1973 - 1974

	Fiscal Year 1973	Increase Fiscal Year 1974	Total Proposed for Fiscal Year 1974
Smith-Lever Act: Sec. 3(d)			
ALABAMA:			
Alabama A&M Univ.	\$334,203	--	\$334,203
Tuskegee Institute	334,203	--	334,203
ARKANSAS:			
Univ. of Arkansas at Pine Bluff	286,153	--	286,153
DELAWARE:			
Delaware State College	134,112	--	134,112
FLORIDA:			
Florida A&M Univ.	252,233	--	252,233
GEORGIA:			
Fort Valley State College	367,332	--	367,332
KENTUCKY:			
Kentucky State College	409,147	--	409,147
LOUISIANA:			
Southern Univ. & A&M College	277,722	--	277,722
MARYLAND:			
Univ. of Maryland Eastern Shore	220,074	--	220,074
MISSISSIPPI:			
Alcorn A&M College	354,596	--	354,596
MISSOURI:			
Lincoln University	393,405	--	393,405
NORTH CAROLINA:			
North Carolina A&T State Univ.	556,914	--	556,914
OKLAHOMA:			
Langston Univ.	261,172	--	261,172
SOUTH CAROLINA:			
South Carolina State College	309,909	--	309,909
TENNESSEE:			
Tennessee A&I State Univ.	411,959	--	411,959
TEXAS:			
Prairie View A&M College	496,112	--	496,112
VIRGINIA:			
Virginia State College	360,754	--	360,754
Special Projects	240,000	--	240,000
TOTAL	\$6,000,000 <u>a/</u>	--	\$6,000,000 <u>a/</u>

a/ The 1973 Agriculture-Environmental and Consumer Protection Appropriation Act and 1974 budget request provide that \$2,000,000 of these funds shall be placed in reserve pending determination of the availability of qualified personnel.

Table 1c

APPROPRIATIONS FOR PAYMENTS TO STATES
RURAL DEVELOPMENT, FY 1973 - 1974

	Fiscal Year 1973	Decrease Fiscal Year 1974	Total Proposed for Fiscal Year 1974
Smith-Lever Act: Sec. 3(d)			
Alabama	\$ 24,636	--	\$ 24,636
Alaska	4,904	--	4,904
Arizona	7,626	--	7,626
Arkansas	19,435	--	19,435
California	25,470	--	25,470
Colorado	10,516	--	10,516
Connecticut	9,219	--	9,219
Delaware	5,369	--	5,369
Florida	15,832	--	15,832
Georgia	27,472	--	27,472
Hawaii	4,966	--	4,966
Idaho	9,632	--	9,632
Illinois	32,109	--	32,109
Indiana	29,584	--	29,584
Iowa	30,073	--	30,073
Kansas	17,733	--	17,733
Kentucky	29,264	--	29,264
Louisiana	18,679	--	18,679
Maine	8,470	--	8,470
Maryland	13,141	--	13,141
Massachusetts	10,856	--	10,856
Michigan	31,869	--	31,869
Minnesota	28,543	--	28,543
Mississippi	27,006	--	27,006
Missouri	28,127	--	28,127
Montana	8,875	--	8,875
Nebraska	16,083	--	16,083
Nevada	4,689	--	4,689
New Hampshire	6,511	--	6,511
New Jersey	10,698	--	10,698
New Mexico	7,482	--	7,482
New York	30,909	--	30,909
North Carolina	45,108	--	45,108
North Dakota	11,686	--	11,686
Ohio	36,119	--	36,119
Oklahoma	16,472	--	16,472
Oregon	12,305	--	12,305
Pennsylvania	36,857	--	36,857
Puerto Rico	32,799	--	32,799
Rhode Island	4,726	--	4,726
South Carolina	22,724	--	22,724
South Dakota	11,892	--	11,892
Tennessee	30,899	--	30,899
Texas	38,396	--	38,396
Utah	6,387	--	6,387
Vermont	7,187	--	7,187
Virginia	26,447	--	26,447
Washington	14,681	--	14,681
West Virginia	14,461	--	14,461
Wisconsin	29,233	--	29,233
Wyoming	5,843	--	5,843
Special Projects	40,000	--	40,000
Reserve	1,000,000	-1,000,000	--
TOTAL	2,000,000	-1,000,000	1,000,000

Table 1D

Appropriations for Payments to States
Title V of Rural Development Act of 1972
FY 1973 - 1974

	Fiscal Year 1973	Increase Fiscal Year 1974	Total Proposed for Fiscal Year 1974
Alabama	--	\$ 46,580	\$ 46,580
Alaska	--	12,233	12,233
Arizona	--	17,463	17,463
Arkansas	--	40,882	40,882
California	--	54,770	54,770
Colorado	--	25,152	25,152
Connecticut	--	21,533	21,533
Delaware	--	13,180	13,180
Florida	--	36,542	36,542
Georgia	--	53,558	53,558
Hawaii	--	12,320	12,320
Idaho	--	23,691	23,691
Illinois	--	79,149	79,149
Indiana	--	73,022	73,022
Iowa	--	77,027	77,027
Kansas	--	44,032	44,032
Kentucky	--	69,400	69,400
Louisiana	--	39,228	39,228
Maine	--	19,309	19,309
Maryland	--	29,540	29,540
Massachusetts	--	24,784	24,784
Michigan	--	71,211	71,211
Minnesota	--	72,527	72,527
Mississippi	--	48,410	48,410
Missouri	--	65,219	65,219
Montana	--	22,530	22,530
Nebraska	--	41,172	41,172
Nevada	--	11,944	11,944
New Hampshire	--	15,496	15,496
New Jersey	--	24,829	24,829
New Mexico	--	18,004	18,004
New York	--	67,562	67,562
North Carolina	--	87,655	87,655
North Dakota	--	29,561	29,561
Ohio	--	84,739	84,739
Oklahoma	--	38,893	38,893
Oregon	--	29,924	29,924
Pennsylvania	--	81,826	81,826
Puerto Rico	--	57,042	57,042
Rhode Island	--	11,866	11,866
South Carolina	--	40,861	40,861
South Dakota	--	30,933	30,933
Tennessee	--	64,437	64,437
Texas	--	80,942	80,942
Utah	--	15,440	15,440
Vermont	--	16,857	16,857
Virginia	--	53,977	53,977
Washington	--	34,508	34,508
West Virginia	--	31,275	31,275
Wisconsin	--	72,196	72,196
Wyoming	--	14,769	14,769
4 percent - Federal Administration	--	100,000	100,000
10 percent to finance work in 2 or more States	--	250,000	250,000
TOTAL	--	2,500,000	2,500,000

Table II

APPROPRIATION FOR PAYMENTS TO STATES

Basis of Allotment and Matching Required, F.Y. 1974

Item	Total Estimate 1974	Basis of Allotment	Amount Paid Without Matching	Amount Required Matching
Smith-Lever Act:	\$187,535,000			
Section 3(b)		\$ 56,475,091 -- Fixed by Sec. 3(b) of Public Law 87-749	\$ 14,513,808	\$41,961,283
		1,544,909 -- Special Needs	- -	1,544,909
Section 3(c)		46,889,000 17,973,376 by farm population; 17,973,376 by rural population; 9,186,688 equally; and 1,755,560 for Exten- sion Service admin- istration and coor- dination Sec.3(c)1.	1,755,560:	45,133,440
Section 3(d)		54,860,000 -- Allocated on basis of approved projects	54,860,000:	- -
Retirement and Employee Compensation Costs	13,407,000	13,407,000 -- Federal contribu- tion to these funds	13,407,000	- -
Penalty Mail	14,359,000	14,359,000 -- Reim- bursement to the Postal Service	14,359,000	- -
Agricultural Marketing Act	1,450,000	1,450,000 -- approved projects & contracts	- -	1,450,000
Title V - Rural Develop- ment Act	2,500,000:	2,500,000 -- for approved projects and Administration	2,500,000:	- -
Subtotal	191,485,000	191,485,000	101,395,368	90,089,632
D.C. Public Education Act	800,000	800,000 768,000 to District of Columbia and 32,000 for Ext.Svc.:	32,000	768,000
Grand Total	\$192,285,000:	\$192,285,000	\$101,427,368:	\$90,857,632

TABLE III
SOURCES OF FUNDS ALLOTTED FOR COOPERATIVE EXTENSION WORK
For Fiscal Year Ending June 30, 1973

States	Grand Total	Total Federal Funds	Total Within States	Funds From Federal Sources: Smith-Lever Act 1/ Marketing Act 2/	Agricultural	State	County	Non-Tax
Alabama	\$ 10,761,135	\$ 5,592,311	\$ 5,168,824	\$ 5,554,931	\$ 37,380	\$ 3,792,938	\$ 1,265,841	\$ 110,045
Alaska	1,054,540	500,680	553,860	500,680	-	553,860	-	-
Arizona	2,896,612	1,209,297	1,687,315	1,202,797	6,500	1,538,555	91,400	57,360
Arkansas	7,806,439	3,991,608	3,814,831	3,970,528	21,080	3,152,480	566,651	95,700
California	17,081,467	5,418,083	11,663,384	5,376,290	41,793	8,505,438	2,719,327	438,619
Colorado	4,823,593	1,602,451	3,221,142	1,563,451	39,000	1,968,602	1,169,000	83,540
Connecticut	2,442,682	1,096,475	1,346,207	1,088,805	7,670	1,346,207	-	-
Delaware	1,124,078	737,216	386,862	715,016	22,200	376,225	-	10,637
Florida	9,251,216	3,383,048	5,868,168	3,363,748	19,300	4,022,917	1,738,951	106,300
Georgia	14,032,727	5,666,387	8,366,340	5,619,587	46,800	5,737,000	1,704,620	-
Guam	399,286	299,286	100,000	299,286	-	100,000	-	-
Hawaii	2,282,346	739,696	1,542,650	722,992	16,704	1,542,650	-	-
Idaho	2,931,856	1,204,706	1,727,150	1,195,362	9,344	1,102,500	600,000	24,650
Illinois	12,817,674	5,186,483	7,631,191	5,159,683	26,800	5,823,312	1,106,707	701,172
Indiana	9,292,465	4,054,852	5,237,613	4,012,452	42,400	2,650,281	2,559,598	27,734
Iowa	10,102,986	3,987,161	6,115,825	3,956,161	31,000	3,508,000	2,524,715	83,110
Kansas	9,585,944	2,637,548	6,948,396	2,590,348	47,200	2,540,457	3,773,435	634,504
Kentucky	10,387,968	5,427,936	4,960,032	5,375,936	52,000	3,512,994	1,447,038	-
Louisiana	9,486,201	4,104,009	5,382,192	4,073,909	30,100	5,026,841	343,734	11,617
Maine	2,649,587	1,161,702	1,487,885	1,144,302	17,400	1,209,026	278,859	-
Maryland	6,150,412	2,130,841	4,019,571	2,087,841	43,000	3,186,472	825,349	7,750
Massachusetts	4,258,929	1,791,921	2,467,008	1,738,521	53,400	853,310	1,613,698	-
Michigan	12,865,935	4,763,627	8,102,308	4,635,127	128,500	5,360,486	2,004,651	737,171
Minnesota	9,172,494	3,856,242	5,316,252	3,828,242	28,000	3,491,930	1,791,647	32,675
Mississippi	10,068,452	5,232,492	4,835,960	5,200,902	31,590	3,686,661	1,048,049	101,250
Missouri	12,160,846	4,980,227	7,180,619	4,918,127	62,100	5,144,357	1,497,058	539,204
Montana	2,905,453	1,181,160	1,724,293	1,171,960	9,200	750,300	829,760	144,233
Nebraska	6,444,286	2,225,776	4,218,510	2,218,626	7,150	2,775,855	1,380,430	62,225
Nevada	1,588,929	551,002	1,037,927	551,002	-	736,294	296,628	5,005
New Hampshire	1,482,051	706,848	775,203	696,848	10,000	446,016	329,187	-
New Jersey	5,972,525	1,820,496	4,152,029	1,804,496	16,000	2,587,207	1,564,822	-
New Mexico	2,960,873	1,254,593	1,706,280	1,232,593	22,000	1,231,280	475,000	-

States	Grand Total	Total Federal Funds	Total Within States	Funds from Federal Sources		State	County	Non-tax
				Smith-Lever Act 1/	Agricultural Marketing Act 2/			
New York	18,748,483	5,798,197	12,950,286	5,744,197	54,000	4,230,611	7,401,776	1,317,899
North Carolina	18,250,254	7,719,022	10,531,232	7,657,482	61,540	6,735,575	3,795,657	-
North Dakota	3,267,909	1,583,391	1,684,518	1,570,391	13,000	856,163	762,164	66,191
Ohio	11,347,898	5,701,303	5,646,595	5,662,703	38,600	3,000,000	2,295,262	351,333
Oklahoma	7,795,306	3,458,433	4,336,873	3,394,033	64,400	2,772,873	1,355,000	209,000
Oregon	6,195,467	1,692,432	4,503,035	1,645,232	47,200	3,515,037	987,998	-
Pennsylvania	10,180,591	6,089,494	4,091,097	6,062,394	27,100	2,924,432	1,166,665	-
Puerto Rico	7,075,996	4,316,763	2,759,233	4,316,763	-	2,704,200	-	55,033
Rhode Island	965,557	584,340	381,217	580,570	3,770	333,718	41,678	5,821
South Carolina	7,403,741	4,172,374	3,231,367	4,167,266	5,108	3,176,097	46,220	9,050
South Dakota	3,606,739	1,587,219	2,019,520	1,579,046	8,173	1,498,145	510,844	10,531
Tennessee	10,487,863	5,688,069	4,799,794	5,663,179	24,890	3,660,993	1,138,801	-
Texas	21,571,529	9,235,755	12,335,774	9,195,642	40,113	8,286,714	3,792,806	256,254
Utah	2,274,426	934,337	1,340,089	917,415	16,922	1,020,998	291,634	27,457
Vermont	1,920,314	819,604	1,100,710	807,271	12,333	927,210	172,000	1,500
Virginia	13,332,355	4,807,393	8,524,962	4,781,693	25,700	6,793,582	1,731,380	-
Virgin Islands	368,727	288,727	80,000	288,727	-	80,000	-	-
Washington	5,255,051	2,012,707	3,242,344	1,987,807	24,900	1,989,746	1,252,598	-
West Virginia	4,480,885	2,596,006	1,884,879	2,589,106	6,900	1,039,973	844,906	-
Wisconsin	10,667,695	3,881,797	6,785,898	3,854,497	27,300	3,686,331	2,966,359	133,208
Wyoming	1,699,325	687,116	1,012,209	682,316	4,800	725,553	286,656	-
Unallotted AWA Contracts	935,481 17,640	935,481 17,640	- -	935,481 -	- 17,640	- -	- -	- -
GRAND TOTAL	385,091,219	163,103,760	221,987,459	161,653,760	1,450,000	148,218,402	66,386,559	7,382,498
District of Columbia 3/	1,536,000	768,000	768,000	-	-	768,000	-	-

1/ Includes \$2,000,000 of Section 3(d) Funds for Colleges receiving benefits of Second Morrill Act, placed in reserve pending the determination of the availability of qualified personnel.

2/ Preliminary Distribution

3/ D.C. Public Education Act

4/ Includes \$500,000 for Pest Management Funds not distributed at this time.

Table IV

COOPERATIVE EXTENSION AGENTS, BY ORGANIZATION CLASSES
(Man-year Equivalents)

Extension Workers by Organization Classes	:	FY 1971	:	FY 1972	:	FY 1973
<u>State Workers:</u>	:		:		:	
Directors and administrative personnel	:	327	:	344	:	358
State, Regional and Area Specialists	:	3,553	:	3,612	:	3,735
Total, State Staff	:	3,880	:	3,956	:	4,093
<u>County Workers:</u>	:		:		:	
Leaders and Supervisors	:	586	:	599	:	599
Area Agents	:	1,043	:	1,167	:	1,195
County Agricultural agents ...	:	5,620	:	5,605	:	5,612
County Home Economics agents .	:	4,108	:	4,155	:	4,136
Total, County Staff	:	11,357	:	11,526	:	11,542
Grand Total	:	15,237	:	15,482	:	15,635

STATUS OF PROGRAM

Extension has broadened its scope in assisting people through education. Its programs are dealing with more specific problems within the established Extension programs.

Agricultural production and marketing is a key program of the Cooperative Extension Service across the nation. More than two fifths of all professional personnel employed by the Cooperative Extension Service in June 1972 worked on Agriculture and Natural Resources. Agricultural programs deal with: --

- Environmental improvement.
- Improving performance of commodity production and marketing.
- Helping farmers and agriculturally related business adjust to change.
- Improving the use and management of natural resources.
- More effective insect, pest and disease management.

Extension home economics provides education to enhance the quality of living for families at all levels of society. Special effort is directed to low-income families, racial minorities, the handicapped, the elderly, the youth, and leaders of women's organizations. National leadership is provided on program management, subject matter, organization, and methods of family-related education. More than 860,000 volunteer leaders assist Extension home economists in helping 16.5 million families to improve the quality of their nutrition and family life.

The 4-H youth programs have reached an all-time high involving nearly 5 million young people. With the increasing population of youth, delinquency has become more of a concern and 4-H programs that would assist in its prevention are being further developed and implemented.

SPECIFIC EXAMPLES OF ACCOMPLISHMENTS FOLLOW:

IMPROVING FARM INCOME

Cotton. A special Extension appropriation of \$500,000 earmarked for expanded work to increase production of quality cotton was initiated in fiscal year 1972. This fund was allocated to the 14 major cotton States and coordinated by the Extension regional cotton specialist at Memphis.

The August USDA estimate places the 1972 cotton yield at 487 pounds of lint per acre for an 11 percent increase of 49 pounds over the 1971 average of 438 pounds, or slightly over 11 percent increase per acre. The estimate for total production of cotton in 1972 is up 25 to 30 percent over 1971. Extension Service has had the leadership with two key programs of (1) increasing the yield of quality cotton and (2) pest management which appears to have contributed to the 1972 increased yields. Extension Service is also conducting a project to secure actual cost data on narrow-row versus standard-row cotton with in-field tests this year.

Soybeans. A very effective working relationship continued with soybean industry leadership. One of the problems identified by the industry was the lack of producer knowledge of foreign demand for U. S. soybeans, competing countries, and the importance of foreign market development. As a result, Extension produced a slide series including a script for use by the State Extension Services and industry leadership. This slide series has been extensively used by the American Soybean Association, American Soybean Institute, and Extension specialists and agents. In addition, approximately 40,000 copies of a leaflet on "Building World Markets for U. S. Soybeans" and an equal number on "Soybean Demand Around the World" have been produced and distributed.

Wheat. A wheat task force developed a joint meeting of National Association of Wheat Growers, Extension State specialists, and wheat industry people at Denver,

Colorado. With the guidance of wheat leadership, a pilot project was established with Montana State University to improve wheat marketing information for growers. Extension Service and the Montana Wheat Association are financing this project. Headway has been made with Kansas to plan a multi-State project for developing a computer program for wheat farms to be used in assisting wheat farmers in making overall adjustments in their farm business.

Sheep Eight model sheep management systems were developed with Sheep Industry Development, Inc. (SID), and 6,400 copies of these outlines have been ordered. Nine "Sheep for Profit Demonstrations" have been planned and started in three States in conjunction with State livestock specialists. A "Sheep for Profit" Symposium was held for over 230 sheep industry leaders and research personnel. The final draft of a publication, "Earning a Living with Sheep" has been completed. Extension supplied leadership in planning the Nation Wool Symposium on production and marketing of wool. Lamb producers in Virginia, West Virginia, and North Carolina have received from 40 to 95 cents per cwt. more for their lambs by selling with the Tel-o-auction developed by USDA Extension Service and the State Extension Services. Over 20,000 lambs are now being sold by this cooperative marketing organization.

Swine The Extension Service helped the industry leaders and land-grant Universities compile, publish, and distribute four research reviews and 20 fact sheets on swine health, housing, reproduction, and feed additives. Eight regional educational meetings and workshops were conducted to extend this information to swine producers. An Extension economist participated as a member of the USDA special study pork team and also aided in planning a National Pork Quality Symposium which was attended by over 100 industry leaders. Extension has supplied leadership in national symposiums and research and demonstrations in dealing with the stress syndrome and the soft, watery pork problem. Research and demonstration in 1972 showed a herd can be cleared of the stress syndrome by using genetics as a base. Also, there is now evidence of a close relationship between the stress syndrome and the "soft, watery pork" problem. Extension is providing pork producers with the best information available on these two problems.

Potatoes. In 1972 from three to six variety plantings of potential new commercial potato varieties were made in eight Western States under the "Eastern Regional Variety Trials." These plantings were given to more than 500 growers as a basis for evaluating the commercial potential of 12 new varieties. All the seed increase was from one site--Aberdeen, Idaho. The Extension Service initiated this program in 1970. It is the first opportunity to evaluate new potato varieties on such an extensive scale for the industry in 11 Western States.

Foreign Trade. To meet the rapidly growing needs for educational materials on international trade, Extension Service has incorporated foreign trade into its present educational programs and proceeded to develop new materials on the subject. Current programs in foreign trade are being directed through commodity programs. Several pamphlets, a reference publication, and a slide series were prepared on soybean market development activities. These have been reproduced and used extensively throughout the soybean producing States during the last year. Under a contract agreement with Michigan State, comprehensive educational materials, including pamphlets, teaching manuals, and teaching aids such as slides and overlays are being prepared for use by State specialists. To complement and encourage the use of these materials, a training workshop for State specialists is planned. These materials are being directed to an audience of agricultural producers and processors who would be interested in the export market but have no knowledge of the procedures, rationale, or economics of foreign trade.

Agricultural Program Aides. An Intensified Farm Planning Program for low-income farmers was conducted by the Texas Extension staff. This program demonstrated that program aides can be effectively used with low-income and limited-resource farmers to assist them to make progress both within agriculture and

outside agriculture. Other States are now testing and expanding use of agricultural program aides reflecting the Texas results.

These programs have demonstrated that program aides, working under the guidance of Extension personnel, can work effectively to help limited-resource farmers make more effective use of their resources and assess off-farm alternatives available to them.

Pest Management Program. The Extension Service has the educational leadership for the new USDA pest management program funded with \$2.3 million for the next three years. The bulk of this effort is on cotton with pilot projects on potatoes, alfalfa, sweet corn, peppers, beans, apples, and tobacco. The basic pest management program objective has been to develop a total pest control program which is scientifically, economically, and environmentally sound. Pest management programs are designed as grower programs and incorporate the most advanced technology available.

ENVIRONMENTAL IMPROVEMENT

The Extension Service has provided the leadership and funding for a six-State project on handling waste from cattle feedlots in the Great Plains area and a Midwest project centered in Iowa for swine, dairy, and beef cattle. As a result of these two programs, farmers and other feedlot operators are rapidly adjusting operations to meet these requirements. Nebraska reports that 75 feedlots have now completed waste management plans like the one being recommended by the Extension project. Other feedlots are being redesigned and new ones built in other Great Plains States.

Four slide sets have been produced as part of the Iowa project and are now available for all States to purchase. They show buildings and techniques to use in solving the waste management problem. A self-contained teaching slide set and taped narrative entitled "Animal Waste Technology" has been completed. Four publications are being prepared and a second Animal Waste Management System Design Conference is being planned for the fall of 1973. Two tours have been planned for 1972: (1) for farmers to visit three demonstration sites and (2) for Environmental Protection Agency personnel interested in seeing animal waste management in Iowa. Also, two fact sheets have been developed for the Southern Plains area: (1) Legal Aspects of Odor and Dust Control and (2) Feedlot Runoff Disposal on Crops and Grass Areas.

Cotton Dust--"Byssinosis"--Extension continued to take a lead in providing assistance, educational information, and guidance to the cotton industry on the harmful effects of cotton dust or "Byssinosis." "Byssinosis--Present Situation" was published in the April 1972 issue of Textile Industries and widely disseminated to leaders of the cotton and textile industries.

"No-tillage" and "minimum tillage" crop production systems are being explained and encouraged by the Extension Service in order to reduce erosion, usually increase income, and improve the quality of the environment. Extension Service prepared 48 slides and script illustrating research and field experience on no-tillage and minimum tillage which has been accepted for distribution by the Office of Information, USDA. Also, a publication "Tillage Alternatives" has been produced for use by the State specialists. There has been a significant increase in acreage of crops planted by no-tillage systems during the past year. Specialists in Kentucky, a pioneer State in developing the no-tillage concept, estimated nearly one-half million acres of corn, sorghum, small grain, and soybeans were planted. Iowa, another leader in this field, reports more than 70,000 acres planted by the no-tillage method. Other States reporting increases of planting crops by no-tillage, minimum tillage, and reduced tillage systems, include Maryland, Virginia, Ohio, North Carolina, South Carolina, Illinois, Kansas, and Missouri.

DIETS AND NUTRITION

Nearly one-third of home economists' time during fiscal year 1972 was devoted to

food and nutrition education. This area has received increased emphasis since the initiation of the Expanded Food and Nutrition Education Program: all segments of society benefit from programs aimed at improving the diets of family members.

As of June 30, 1972, more than 3 million families, containing 14.5 million individuals, had been contacted or worked with intensively in the Expanded Food and Nutrition Education Program during the past 3½ years. Almost 9,000 program aides were employed in 1,490 counties, independent cities, and Indian reservations in the 50 States, Puerto Rico, District of Columbia, and the Virgin Islands. Also, more than 50,000 volunteer leaders worked with about 870,000 low-income urban youth during fiscal year 1972 in 4-H type activities related to improved nutrition.

Food recalls taken at 6-month intervals indicate that improvements are being made in diets of low-income homemakers. Most significant increases have been in the amounts of vegetables and fruits consumed daily. Program homemakers whose diets met the minimum requirements increased from 7 percent in March 1969 to 28 percent during the latest food recall. Those reporting at least one serving from each of the four food groups increased from 51 percent to 81 percent during the same period.

Reports of changes in participating families continue to support the value of this educational program:

A young homemaker has switched from drinking "pop" to vitamin C drinks and cocoa and is including more milk, fruits, and vegetables in family meals. Result: a saving in food costs and a healthier family.

With concentrated assistance from an aide, a homemaker who felt defeated and lacked self-confidence has learned to measure, cook, and serve good food in attractive ways. The outlook and health of the entire family have improved.

An aide started working with a homemaker, whose husband had left her with seven children and resources limited to aid to dependent children, food stamps, and medical assistance. Beginning with lessons on nutrition, food buying, and food preparation, she listened eagerly and applied her new knowledge. Result: an increased food supply and healthier children.

Sixteen youth from the Expanded Food and Nutrition Education Program (EFNEP) families planted and worked a 2/3-acre community garden, with the help of program aides. Yields have been excellent. Food conservation workshops will help the families freeze and can the surplus vegetables for winter use.

A county reports that men have been actively participating in EFNEP group meetings. They are interested in nutrition, too, particularly in the preparation of nutritious low-cost recipes and menus.

FAMILY LIVING

Adult educational programs improve the quality of family living and affect the home environment of all members of the family. These programs help individuals make decisions, solve ever-changing problems, and develop into worthwhile citizens.

Consumer Education. Provides information to help families make wise decisions in the selection and use of goods and services consistent with family goals. This includes money management as well as buying food, clothing, furniture, and equipment. Consumer education reaches families through various methods--e.g., mass media, group meetings, training community and professional leaders who in turn inform and educate families.

Educational television is utilized by the Connecticut Extension family economics specialist as a method for training community leaders who work with low-income families. Work is currently being done to provide such information on food buying, credit, buying automobiles, etc., in Spanish.

Family Relations and Child Development. Two outstanding projects in Mississippi were well accepted by both youth and adults. About 15,400 adults and 20,000 youth participated in "Family Relations--Project Outreach"; the youth program "Drugs--Family Breakdown" reached 21,000 adults and 20,000 youth. This drug project is an ongoing program in all 80 counties. Extension homemaker club members and the State Extension family life specialist coordinated a program, adaptable to county and local needs, to organize 317 Golden Age Clubs now serving nearly 5,000 senior citizens.

Two hundred fifty West Virginia women learned skills to increase their competence in interpersonal relationships, both in the family and in the community. Local volunteer leaders, trained by State and county Extension home economists, taught the women to recognize communication barriers, to help youth face today's problems, and to deal with conflict.

The generation gap has been just about overcome by the Windsor Urban Center, an outreach of the University of Vermont Extension Service. Staffed by professionals, aides, a work-study student, youth corps members, as well as community volunteers, the center reaches about 150 low-income families in the area. A sampling of programs includes an adult education program, a day camp for grade school youth, a preschool for 3- and 4-year-olds, and liaison between the people and social assistance programs. The center grows gardens; tutors high school students; and teaches consumer education, budget planning, and home management.

Housing. A Home Improvement Program, an 8-week intensive training program designed to meet the needs of the low-income homeowner, specifically the welfare homeowner, is currently in its third year of operation in Milwaukee County, Wisconsin. The project, employing an Extension home economist, is jointly funded by the housing authority and the Extension Service to help families who are applying for renovated homes. They have worked with 400 prospective low-income families concerning problems and procedures of home ownership. Eligible participants enroll in 6 classes per week for 8 weeks and receive a training stipend while enrolled. Participants who have completed the program are reaping benefits of a better place to live, including improvements in furnishings and home interiors.

COMMUNITY RESOURCE DEVELOPMENT

Extension, through its educational programs, is increasingly concerned with helping people know better how to live as well as how to make a living.

Community leaders want to push ahead and make rural America a better place in which to live and work. Extension is responding and is expanding its educational programs contributing to USDA's rural development program to help local people achieve their community facilities, economic development, environmental improvement, and people building goals.

Examples of some of these kinds of help follow.

Community Facilities. The Cooperative Extension Service has provided continual guidance and support for a self-help housing program in St. Marys County, Maryland. It is estimated that 21 percent of the houses in the county are in deteriorating or dilapidated condition. Yet, residents must pay up to \$181 rent per month. Many groups have attempted to deal with the housing problem in St. Marys County.

A major breakthrough came with the incorporation of a private, nonprofit housing corporation which purchased land for 90 housing units to be built on a self-help plan. This program has enabled low-income residents to occupy three to four bedroom homes for \$13,000. These same homes would sell commercially for \$20,000 to \$23,000. Cooperation and self-help construction reduced the costs.

Economic Development. Extension helped Alabama counties inventory and make economic feasibility studies for potential industrial clients. Extension made a preliminary economic evaluation of the opportunities for developing additional lumber finishing facilities in east central Alabama. This contributed to a \$500,000 expansion of a wood products firm located in the study area.

Kentucky Extension workers provided significant assistance to 25 industrial development committees with organization and training, 25 with securing or developing industrial sites, and 13 with direct solicitation of new industries in FY 1972. These activities resulted in 1,403 acres of new industrial sites being secured in 22 different locations. Six industrial development corporations were helped with financing plans and seven with leader training involving 95 leaders. Individual assistance was given to 139 industrial development leaders. Fifty-four business managers were assisted in obtaining management assistance through the University of Kentucky College of Business and Economics.

In Louisiana, a Statewide survey of vacant buildings suitable for industrial use was conducted through the parish (county) agents. Pertinent information about the buildings was compiled and turned over to the State Department of Commerce and Industry. As a result of this effort, local committees were formed in several communities to attract industry. This inventory has served to locate seven new industries in rural areas during the last year. Agents in a number of parishes serve on local development boards. Training meetings have been conducted in several communities to help local persons understand the necessary ingredients of an industrial development committee or board.

Environmental Improvement. With land use legislation in Colorado requiring that county commissioners establish county planning commissions by July 1, 1972, the Extension field staff provided leadership in all of the nonmetropolitan counties engaged in meeting this legislative dead line. The Extension Service personnel were assigned to the newly created Land Use Commission Task Force and conducted seminars throughout the State to explain the new legislation and to provide direct input from local citizens in developing the State land use plan, forming county planning commissions and directions for the emerging role of the Land Use Commission.

Oregon State University extended the services of several academic disciplines to a small, rural community in southwestern Oregon (Myrtle Creek) and developed a much-needed park plan. The Extension Service, using the time and talents of the University, was able to solve a critical community problem while effectively teaching students park planning and design. Upon completion of the master plan, the students presented the project to the citizens of Myrtle Creek. Paramount in the recommendations was the importance of getting the community involved in financial support, construction, care and use of the park. The park model is now on display in city hall and plans are being made for implementation.

People Building. A breakthrough in manpower development programs in 1972 was "Operation Hitchhike." The Department of Agriculture and the Department of Labor have developed plans for the delivery of manpower services to residents of rural areas through their cooperative effort. State Cooperative Extension Service and State Employment Service personnel make information counseling and job referral services available. For example, in Algona, Iowa, during the April-June quarter, 286 job applications were received. Of these, 226 were referred for training or employment and 77 were placed in nonagricultural jobs. Similar activities took place in the other 13 States participating in "Hitchhike."

Extension Service is the USDA coordinating agency for a local-Federal-State cooperative effort known as Concerted Services in Training and Education (CSTE). There are 18 program areas in 14 States. Reports indicate that twice

as many rural people are participating in one or more education, training, or job development activities in the CSTE areas as in other similar areas in the same States. For example, during the month of June in the eastern Arkansas area, 412 people were engaged in special training, education, and job development activities, and 338 were placed in new jobs during this month.

4-H - YOUTH DEVELOPMENT

Through flexible 4-H programs and methods, the Cooperative Extension Service is serving a broad range of interests and needs of today's youth, wherever they live and whatever their economic circumstances. Approximately 28 percent of 4-H members are from families with incomes below the poverty line. Eighteen percent are from minority ethnic and racial groups.

The latest national summary shows that Extension is serving the following numbers of youth:

Youth Served Through 4-H - Youth Development Programs in 1971

Members in Organized 4-H Clubs	2,119,038
Youth in 4-H Special Interest Groups	370,008
Instructional 4-H TV Members (In addition to above)	482,154
Special 4-H-Type Nutrition Programs for City Youth	560,238
Other Youth Contacted or Provided Information	<u>1,423,162</u>
TOTAL	4,954,600

There are over 95,000 organized 4-H Clubs. More than 432,000 volunteer adult men and women have been enlisted and trained by Extension 4-H leaders, and 159,000 older youth are serving as junior and teen leaders.

4-H Members by Place of Residence--1971

	<u>Percent</u>
Farm	33.6
Towns under 10,000 and open country	42.6
Towns and cities 10,000 to 50,000	12.1
Suburbs of cities over 50,000	6.0
Central cities of over 50,000	<u>5.7</u>
TOTAL	100.0

Gradual shifts during the past decade have been made in 4-H - Youth programs in response to the broadening interests and personal development needs of youth; at the same time, Extension has continued strong 4-H programs for farm and rural boys and girls.

- More emphasis on science in 4-H educational programs and projects related to agriculture, family living, environment, and other areas.
- Inclusion of career exploration and youth employment as integral parts of 4-H project programs with special emphasis for teen-age youth.
- Concentrated 4-H-type nutrition programs for youth in urban areas.
- Broadened outreach to low-income and minority youth in both rural and urban areas.
- More flexibility in programs, organizational patterns and educational methods, including instructional 4-H television to serve youth in diverse socioeconomic and residential situations.

Project and Curriculum Development. Modernization of the 4-H project curriculum is a continuing need.

During the last year, 17 National 4-H Program Development Committees were in various stages of reviewing present projects, updating them, or initiating new programs. Some areas covered by these committees included: aerospace; automotive; citizenship; community development; consumer education; furnishings; housing and equipment; horse; 4-H incentives and awards; international task force; leadership; older teen programs; staff development and training; urban programs; home management; petroleum; power program; electric; and nutrition.

Youth Involvement in Program Development. Youth are sharing more fully in Extension 4-H program development as members of 4-H Expansion and Review Committees, on local and county 4-H councils and committees, in State 4-H planning and advisory groups, as full members of national 4-H project or program development committees, and in delegate groups of National 4-H Conference and National 4-H Congress.

Professional Staff Development. In November, 1970, a National 4-H Staff Development and Training Policy recommended the design and implementation of a comprehensive program of 4-H professional, paraprofessional and volunteer leader staff development. USDA Extension Service provides the leadership in carrying out this policy in cooperation with the National 4-H Foundation and private support. In July 1971, the Kellogg Foundation provided a 5-year grant to the 4-H Foundation to carry out this nationwide staff development and training program.

As a result of this new policy, 12 workshops and seminars were conducted at the National 4-H Center and one in Des Moines, Iowa, during the first six months of 1972, with primary emphasis on training State staff and building training models for State use. Covered in these seminars and workshops were such areas as: Youth Involvement in Community Development, Management for Effective 4-H Youth Programs, Volunteer Leadership Development, Paraprofessional Staff Development in 4-H, Supervisory Roles and Functions in 4-H Youth Work, Model 4-H Citizenship Short Courses, and Workshops for New County Extension Agents doing 4-H Work and New State 4-H Youth Staff. All 50 States, District of Columbia, Puerto Rico, and the Virgin Islands have participated in one or more of these training programs with a total of 454 staff members involved.

Volunteer Staff Development. The Volunteer 4-H Leadership continues to make a significant contribution to the scope and quality of the Extension educational program. During the last year, over 343,000 adult volunteer leaders assisted with the 4-H program, plus 159,000 junior or teen leaders. In addition, over 51,300 leaders assisted with the 4-H Expanded Food and Nutrition Education Program.

Program Aides and Assistants. The utilization of paraprofessionals in 4-H Youth Development programs continues to increase. Besides freeing the professional youth agent to do more supervisory and training tasks, program aides and assistants serve very effectively in Extension work with socially and economically deprived families.

Teen and Older Youth Programs. Developing 4-H programs with unique appeal to older youth was a major concern this year in 4-H Youth development. A National 4-H Program Development Committee on Older Youth (10 adult Extension workers, 2 older teens) is presently considering program ideas, materials, and staffing needed to attract more teenage youth into 4-H. In June, an Adult-Youth Interaction Workshop attended by 26 older teens and 17 adults produced a working model for eliminating communication blocks and facilitating interaction between generations.

In San Antonio, Texas, an inner-city pilot program is being implemented which

involved teens and infants from indigenous families, predominantly Mexican-American. The program was designed to give youth (13-16 years of age) an opportunity to increase their competencies for helping children and at the same time increase their own potential for successful parenthood. The teens are given some training in child care, nutrition, health, elementary crafts, and recreation.

Results have far exceeded original expectations. Young parents are asking to be included in more developmental techniques as they begin to see a break in the so-called "chain of cultural deprivation" affecting so many limited income Mexican-American families. The teens have begun to see themselves in a new light as teachers, innovators, and all-around worthwhile persons. Many teenagers, who formerly had no future goals are beginning to ask for guidance from the Extension professionals in further school preparation necessary to becoming child development workers.

4-H in Urban Areas. Developing 4-H programs that better meet the needs of youth in urban areas, particularly in inner cities, continues to be a high priority concern. In 1971, 300,780 4-H members came from towns and cities of 10,000 to 50,000 population, 150,281 from suburbs of cities of over 50,000 and 142,292 from central cities of over 50,000. These numbers do not include youth reached through the Expanded Food and Nutrition Education Program for disadvantaged youth, mainly in cities. Low-income, minority youth make up a large part of the youth reached in cities both through regular 4-H programs and in EFNEP.

Special Delinquency-Related Programs. Although preventive juvenile delinquency is woven throughout most of the programs and project activities conducted through 4-H, several States have directed special programs toward this problem.

The Extension Service in New Jersey is successfully carrying on a special 4-H project in Newark, New Jersey. This program features innovative ways to involve city youth, their parents and others in the community in educational projects. In addition to a marching band, youth are involved in health forums, arts, crafts, beautification and environmental improvement projects, personal and leadership development. The project has also contributed to treatment programs for delinquent youth and delinquency prevention. For example, the Newark project 4-H staff supervises 11 youth currently under the jurisdiction of the Essex County Juvenile Court. Staff and members help these youth understand the impact of their behavior on themselves and the rest of society and carry out a youth advocacy role in its contacts with the court, probation staff, and parents of the youth involved.

4-H Expanded Food and Nutrition Education Program (EFNEP). During fiscal year '72, a total of 866,220 boys and girls participated in the 4-H Expanded Food and Nutrition Education Program aimed at improving the dietary levels of low-income families, particularly city youth, through education and improved use of available resources. This represents a substantial increase over the previous year. There has also been a steady increase in the numbers of volunteers assisting in the 4-H EFNEP program. Over 51,350 different volunteers worked with youth in EFNEP during the last year, compared with a total of 33,000 volunteers in 1971.

Health Decisions. The central focus of 4-H health programs continues to be on personal health decisions--drug education, smoking, alcohol, and communicable diseases. Involvement of youth in community health programs is also being emphasized.

Efforts in drug abuse education were accelerated in 1970, and reached a higher peak in 1971-72. Programs were mainly educational or preventive, aimed at giving youth and parents information for making personal health decisions and

taking effective community action.

Involvement of Youth in Community Development. Young people today have a genuine interest in working with adult community resource development leaders to improve the quality of local, county, and State community life. During the past year, States reported over 235,000 youth involved in 4-H community study and service projects and over 136,000 enrolled in special citizenship programs and public affairs education.

4-H Youth in many States are involved in assisting with community surveys, serving on community and environmental planning bodies, participating in 4-H community study and action programs, and developing understanding of community decision-making processes through community action projects.

Environmental Education and Improvement. All States provided some type of program opportunities for 4-H youth relating to the improvement of our environment. These included such projects as soil and water conservation, wildlife conservation, forestry, pollution control, community beautification, and clean-up programs.

4-H Instructional Television. Two new instructional 4-H TV series were produced in 1972. "Living in a Nuclear Age" was produced in cooperation with the Office of Civil Defense and is designed especially for 7th and 8th graders. This series of six $\frac{1}{2}$ hour shows features a science and ecological approach to understanding the atom, the nuclear age, planning and action for emergency preparedness, and the potential of atomic energy for human betterment. "Mulligan Stew" is the title of a six-part series on nutrition. Designed for 4th, 5th, and 6th graders, the half-hour educational films are aimed at youth in low-income situations. The films are backed by projects and activities for individual boys and girls or groups. Supporting materials for volunteer youth leaders and teachers are also provided. The series focuses on the four food groups, the key nutrients, food purchasing, meal planning, importance of breakfast and eating a balanced diet.

Citizenship Education. Developing responsible citizenship is one of the major goals in all 4-H - Youth programs.

During the summer of 1972, nearly 5,500 4-H'ers, leaders, county and State 4-H agents from 43 States participated in 4-H Citizenship Short Courses held at the National 4-H Center. Activities included assemblies, discussions and field trips dealing with citizenship responsibilities and commitments and what individuals will do about them after returning to their home States. The 12-week series drew between 175 and 600 participants each week. These courses are being expanded and more emphasis is being given to action as teachers back home by those youth who participate.

4-H International Programs. This year marked the 25th anniversary of the International Farm Youth Exchange program, conducted in cooperation with the National 4-H Foundation. To date more than 2,000 young people from the United States and similar numbers from foreign countries have participated in this program. Over 50 U. S. young people traded countries this year with other young people from around the world for 6 months to a year and a half through such programs as IFYE, the Youth Development Project or the Professional Rural Youth Leader Exchange.

Private Sector Support. Private support for 4-H is at an all-time high, and State and counties are gearing up to more effectively enlist the private sector in 4-H programs, both for their expertise and funding.

Cooperation with and assistance from the National 4-H Service Committee and the National 4-H Foundation has been particularly outstanding this past year. This year saw the celebration of the 50th Anniversary of the National 4-H Service Committee and the National 4-H Congress, attended and addressed by the President.

NATIONAL AGRICULTURAL LIBRARY

Purpose Statement

The Organic Act of 1862, establishing the Department of Agriculture, set forth a basic mission "to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of the word," and placed upon the Secretary the responsibility to "procure and preserve all information concerning agriculture which he can obtain by means of books...." The Library was established the same year by the first Commissioner of Agriculture.

Designated the National Agricultural Library in 1962, the Library works closely with the Library of Congress and the National Library of Medicine to fulfill the functions of a national library for the United States.

The National Agricultural Library provides access to the world's agricultural literature. Both current and historical information is collected and organized for effective utilization by a wide range of users. Library services include reference assistance, preparation of bibliographic files, and loan or photoduplication of library materials.

The library services of the National Agricultural Library are carried out through the main library located at Beltsville, Maryland, and through a branch library in Washington, D.C., which includes the law collection and social science materials.

In addition, several agencies of the Department maintain and finance their own libraries. These libraries are situated at field locations where concentration of work and research staff warrants on-site library services. The Director of the National Agricultural Library prescribes library policy, standards, and procedure for these field library services and exercises such controls as are needed to coordinate services in the Department.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

Item	Actual		Estimated		Budget Estimates	
	1972		Available, 1973		1974	
	Amount	Man-Years	Amount	Man-Years	Amount	Man-Years
National Agricultural Library	\$4,142,750	194	\$4,226,750	185	\$4,226,750	181
Obligations under other USDA appropriations:						
Agricultural Research Service						
Special bibliographic services.....	17,201	1	18,000	1	18,000	1
Food and Nutrition Service						
Information and Educational Materials Center.....	93,432	4	170,000	4	170,000	4
Office of Information Systems.....	3,151	-	-	-	-	-
Total, other USDA appropriations.....	113,784	5	188,000	5	188,000	5
Total, Agricultural Appropriation Bill.....	4,256,534	199	4,414,750	190	4,414,750	186
Library facilities.....	-880	-	127,870	-	-	-
Working Capital Fund for micro-film and photoprint reproductions and magnetic tapes....	70,241	4	76,650	5	76,650	5
Other funds:						
Farm Credit Administration						
Library services.....	8,342	1	-	-	-	-
Total, National Agricultural Library.....	4,334,237	204	4,619,270	195	4,491,400	191

(a) National Agricultural Library

Appropriation Act, 1973 \$4,226,750
Budget Estimates, 1974 4,226,750

PROJECT STATEMENT

Project	:	1972	:	1973	:	1974
	:		:	(estimated)	:	(estimated)
1. Agricultural Library services	:		:		:	
for research and education.....	:	\$4,121,522	:	\$4,226,750	:	\$4,226,750
Unobligated balance.....	:	21,228	:	- -	:	- -
Total available or estimate.....	:	4,142,750	:	4,226,750 ^{a/}	:	4,226,750

^{a/} Of this amount, \$6,000 has been withheld from use in 1973 principally from funds budgeted for travel.

STATUS OF PROGRAM

The National Agricultural Library collects agricultural information worldwide and provides it to researchers within the Department of Agriculture and to scientists, students, and other individuals in agricultural colleges and universities, industry, and throughout rural America.

Current Activities: The Library is responsible for all library-related resources and services in the Department of Agriculture and administering its unique collection of books, journals and other information materials in such a way as to sustain and expand the nation's wealth of knowledge in the agricultural sciences.

The Library acts as a focal point for the Department in the development of cooperative efforts in the library and related information areas with other Federal agencies and with educational institutions in each state.

The Library continually seeks to meet the growing information needs of a wide variety of users through the application of new technology and the development of an outstanding collection of library materials.

Selected Examples of Recent Progress:

Collections: The National Agricultural Library collection represents the most comprehensive body of literature available on all phases of agriculture and allied sciences. During fiscal year 1972 more than 18,000 titles were cataloged, and approximately 229,000 serial issues were added to the collection.

Services: From the Library's extensive collections 178,634 items were loaned to individuals in the Department of Agriculture, other government agencies and educational institutions throughout the United States, and 133,587 inquiries were handled.

Mechanization: More than 146,000 bibliographic records of documents received in the Library were added to our machine-readable data base during the fiscal year. This brings the Library's mechanized file of agricultural information to nearly 350,000 records.

(b) Library Facilities

PROJECT STATEMENT

The following statement reflects estimated obligations on the basis of available funds:

Project	1972	1973 (estimated)	Increase or Decrease	1974 (estimated)
1. Plan, construct and partially furnish and equip facilities (obligations).....	-\$880	\$127,870	-\$127,870	- -
Unobligated balance available, start of year.....	-126,990	-127,870	127,870	- -
Unobligated balance available, end of year.....	127,870	- -	- -	- -
Total available or estimate.....	- -	- -	- -	- -

STATISTICAL REPORTING SERVICE

Purpose Statement

The Statistical Reporting Service was established by Secretary's Memorandum No. 1446, Supplement 1, of April 3, 1961 under Reorganization Plan No. 2 of 1953 and other authorities. The Service was created to give coordinated leadership to the statistical reporting research and service programs of the Department. It provides a channel for the orderly flow of statistical intelligence about the agricultural economy of this country. The primary responsibilities of this Service are the nationwide crop and livestock estimates, coordination and improvement of the Department's statistical program requirements, and special surveys of market potentials for agricultural products. Service programs are organized in the following major areas:

1. Crop and livestock estimates. This includes estimates of production, supply, price, and other aspects of the agricultural economy; conduct of enumerative and objective measurement surveys; preparation and issuance of the official National and State estimates and reports of the Department relating to acreages, types and production of farm crops, number of livestock on farms, livestock products, stocks of agricultural commodities, value and utilization of farm products, prices received and paid by farmers, and other subjects as required.
2. Statistical research and service. This includes review, clearance, coordination, and improvement of statistics in the Department; research on and development of improved statistical techniques used in gathering and evaluating statistical data, data processing activities, with related systems analysis and research, programming and processing of data; research on consumers' preference on foods, fibers, and their by-products and consumers' evaluation of costs and other factors when buying these products.
3. Work Performed for Others. Services are performed for other Federal, State, and private agencies, on a reimbursable or advance payment basis. These services consist primarily of conducting surveys and performing related statistical data collection activities. They also include participation in the Agency for International Development foreign visitor training program, technical consultation and support and technical assistance programs abroad under participating agency service agreements.

The Statistical Reporting Service maintains a central office in Washington, D.C., but a large part of the crop and livestock estimates program is carried out through 44 State offices.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

	Actual 1972	Man- Years	Estimated Available, 1973	Man- Years	Budget Estimate 1974	Man- Years
Statistical Reporting Service	\$21,079,672	1,344	\$22,834,200	1,315	\$22,834,200	1,306
Obligations under other USDA appropriations:						
Agricultural Marketing Service, for milk price data.....	31,800	3	32,600	3	32,600	3
Agricultural Stabilization and Conservation Service, for tract count and data on feed grain programs, wool and mohair prices, rice, winter wheat and January intentions.....	181,800	14	217,000	20	217,000	20
Economic Research Service, for data on fertilizer, land practices, land values, farm population, diverted acres, tobacco, cotton and pesticides.....	120,000	10	359,750	32	250,000	22
Federal Crop Insurance Corporation, for acreage, yield and production data on insured crops.....	163,000	14	167,000	14	167,000	14
Food and Nutrition Service, for institutions and school lunch surveys.....	140,000	10	- -	- -	- -	- -
Miscellaneous Reimbursements	5,898	1	51,919	6	124,400	13
Total, other USDA Appropriations.....	642,498	52	828,269	75	791,000	72
Total, Agricultural Appropriation Bill.....	21,722,170	1,396	23,662,469	1,390	23,625,200	1,378
Other reimbursable work:						
Agency for International Development:						
Training for foreign participants.....	32,062	1	72,300	3	55,300	3
Technical cooperation....	23,368	1	25,800	1	25,800	1
Special projects.....	146,647	11	190,800	7	220,000	8
Total, Agency for International Development.....	202,077	13	288,900	11	301,100	12
Department of Commerce, for providing assistance and training, weather crop centennial, and weather and crop bulletin.....	127,951	5	44,171	2	46,000	2
Department of Labor, for data concerning farm labor and job openings, record statistics, and public service career.....	265,530	12	37,000	2	150,000	7
National Aeronautics and Space Administration, for ERTS project.....	15,000	1	150,000	3	90,000	3

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

	: Actual	: Estimated	: Budget Estimate
	: 1972	: Available, 1973	: 1974
	: Amount	: Man- : Years	: Amount : Man- : Years
Cooperative Crop Reporting Service, California Dept. of Agriculture.....	57,045:	2:	36,000: 3:
Cooperative Crop Reporting Service, Iowa Dept. of Agriculture.....	60,796:	3:	66,100: 3:
Cooperative Crop Reporting Service, Pennsylvania Dept. of Agriculture.....	30,000:	2:	30,000: 2:
Miscellaneous reimbursements.	23,880:	2:	34,360: 3:
Funds for work under cooperative agreements.....	11,281:	1:	15,843: 1:
Total, Other funds.....	793,560:	41:	702,374: 30:
Total, Statistical Reporting Service a/	22,515,730:	1,437:	24,364,843: 1,420:
			24,423,800: 1,417

a/ The above table reflects FY 1972 and FY 1973 on a comparability basis with FY 1974. Fiscal year 1972 does not include \$3,609 thousand and 92 man-years for data processing work. Fiscal year 1973 does not reflect \$960 thousand and 24 man-years for data processing work. These dollars and man-years are in the Working Capital Fund schedules of the Office of the Secretary.

STATISTICAL REPORTING SERVICE

Appropriation Act, 1973	\$22,834,200
Budget Estimate, 1974	<u>22,834,200</u>

SUMMARY OF INCREASES AND DECREASES

	<u>1973</u>	<u>Program</u> <u>Changes</u>	<u>1974</u> <u>Estimate</u>
Floriculture statistics	\$204,000	-\$50,000	\$154,000
Penalty mail costs	1,310,000	+155,000	1,465,000
Farm operator's expenditure surveys	1,280,000	-300,000	980,000
Quarterly farm labor program	488,000	+195,000	683,000
All other	<u>19,552,200</u>	<u>- -</u>	<u>19,552,200</u>
Total available	<u>22,834,200</u>	<u>- -</u>	<u>22,834,200</u>

PROJECT STATEMENT

Project	1972	1973 (estimated)	Increases and Decreases	1974 (estimated)
1. Crop and livestock estimates:	\$20,037,834	\$21,966,200	- -(1)	\$21,966,200
2. Statistical research and service	943,499	868,000	- -	868,000
Unobligated balance	98,339	- -	- -	- -
Total available or estimate	<u>21,079,672</u>	<u>22,834,200a/</u>	<u>- -</u>	<u>22,834,200</u>
Transfer to GSA	+8,328			
<u>Total, appropriation</u>	<u>21,088,000</u>			

a/ Of this amount \$267,000 has been withheld from use in 1973 \$50,000 was for Floriculture Surveys and \$217,000 principally from funds budgeted for travel.

(1) A shift in program for crop and livestock estimates consisting of:

(a) A decrease of \$50,000 for Floriculture Surveys (\$204,000 available in 1973).

In the fiscal year 1973 appropriation on increase of \$50,000 was provided for this survey. This amount has been withheld from use in 1973 and is proposed for elimination in 1974.

(b) An increase of \$155,000 for penalty mail (\$1,310,000 available in 1973).

Need for Increase: Postal rate increases have already been announced and the resultant increased cost will be \$155,000. SRS is highly dependent upon postal service for the distribution of questionnaires and the release of information to farmers and others who respond to our questionnaires. During recent years, the agency has made a number of efforts to reduce postal costs by providing greater efficiency in sampling and mailing operations. The requested increase will meet minimum needs for penalty mail.

(c) A decrease of \$300,000 for Expenditure Surveys (\$1,280,000 available in 1973).

This decrease is the result of a reallocation of funds made possible by the completion of the initial phase of the Expenditure Surveys. During FY 1973, the Agency is completing the processing of the Farm Production Expenditure Survey, conducting the first of three family living expenditure surveys, and conducting a pilot annual Farm Production Expenditure Survey. Within this framework, SRS will begin the expansion of the quarterly Farm Labor Program which provides for improved data on farm employment and wage rates.

During FY 1974, SRS will complete the Family Living Expenditure Surveys, and continue the annual Farm Production Expenditure Survey.

(d) An increase of \$195,000 for the Quarterly Farm Labor Program (\$488,000 available in FY 1973).

Need for Increase. This increase will permit SRS to expand the quarterly Farm Labor Program to a fully operational basis for 2 quarters and to a considerable extent in the other quarters. The program has been on a pilot basis since 1968. The expanded program will provide for the collection and publication of farm labor numbers and wage rates on a State basis. The data will refer to the same time periods as other labor data and thus provide better total farm labor data. It will also include data on wage rates, by type of worker, which have not been available from mail surveys. The probability based quarterly survey approach, when fully implemented, is designed to replace the mail surveys. The quarterly program, when conducted at a fully operational level, will yield more accurate estimates of farm wage rates and numbers of farm workers.

Plan of Work: Survey plans include the use of specialized list sampling frames supplemented by an area frame to provide a measure of coverage. Quarterly surveys will be conducted in the 48 contiguous States. Data will be collected through telephone and personal interview contacts.

STATUS OF PROGRAM

The Statistical Reporting Service is the primary Agency in the Department for the collection and publication of current National and State agricultural statistics. The work includes crop and livestock estimates, statistical coordination and improvement, and marketing data surveys.

SRS programs are organized in the following major areas: (1) Crop and livestock estimates, and (2) Statistical research and service.

CROP AND LIVESTOCK ESTIMATES

Current Activities and Trends: This program involves the collection, analysis, and publication of basic production and economic data on agriculture. The official National and State forecast and estimating programs cover the most important aspects of production and marketing. These include: Number of farms and acreage in farmlands; acreage, yields, production, stocks, value and utilization of crops; numbers and production of livestock, poultry and their products; prices received by farmers for products sold and prices paid for commodities and services bought for living and production; farm employment and wage rates; quantities of various foodstuffs in cold storage; other relevant aspects of the agricultural economy; and computation of the parity index.

About 150 crops and 50 livestock items are included in the statistical program. The estimates and forecasts are released through about 600 reports each year. The news media and trade press carry most of the data to the public promptly.

Several hundred thousand farmers, processors, merchants and others serve as volunteer reporters. Their reports are supplemented by field observations, objective yield measurements, and other data to provide basic information for reports issued to the public.

Program for Improving Crop and Livestock Estimates: The principal goals of this program are to (a) increase the accuracy and dependability of National and State data, (b) provide additional data and services needed for commercially important products, (c) conduct regular commodity program reviews to assure that statistical information is provided in an efficient manner and is satisfying user needs, and (d) speed up the release dates and the distribution of reports.

Selected Examples of Recent Progress

A. Activities to Increase Accuracy and Dependability of Data

1. December and June Enumerative Surveys: In fiscal year 1972, the December and June Enumerative Surveys were again conducted on a fully operational basis in the 48 conterminous states. Modifications in survey procedures were implemented to utilize statistical methodology designed to improve the reliability of selected statistical data. The December survey obtained information on livestock, poultry and fall seedings of wheat and rye from a subsample of 16,843 area tracts, selected from the previous June Enumerative Survey. In addition, a sample of 7,918 large livestock and poultry firms were surveyed from a universe of 22,132 such firms. Sample selection emphasizes those tracts which had or reported intentions to have winter wheat or livestock.

The June Enumerative Survey obtained planted acreages of crops, land use, livestock and poultry numbers, births for hogs and cattle, farm labor, and farm numbers for about 16,513 area segments. This is the Agency's largest survey and requires about 1,500 enumerators. Questions on white corn were continued for 10 states (Illinois, Iowa, Indiana, Kansas, Kentucky, Missouri, Nebraska, Ohio, Tennessee and Texas); questions on tart

and sweet cherries were added for Michigan, Wisconsin, New York, and Pennsylvania; and a multiple frame survey for potatoes was incorporated in 12 states (Maine, New York, Pennsylvania, Michigan, Wisconsin, Minnesota, North Dakota, Idaho, Colorado, Washington, Oregon and California). One hundred and thirty area segments were added to the area sample in Washington, North Dakota and Minnesota to obtain supplemental information on potatoes. About 2,130 potato growers were surveyed, in the 12 states listed, to improve the estimates of potato acreage in those important states. A sample of 7,639 livestock and poultry schedules was tabulated from a list of 23,808 extreme operators. The livestock and poultry extreme operator sample was selected by species prior to the survey to avoid the problems of joint probability and nonresponse sample selection during the survey.

In addition, the June Enumerative Survey provided data requested by the Economic Research Service (ERS) on irrigation and use of land set aside to government programs. Farm population information was also collected, edited, coded and processed as part of the regular June Enumerative Survey. Agricultural labor data were collected classifying farm operators for use in the quarterly agricultural labor survey sample frame.

2. Acreage Update Survey: The first July Acreage Update Survey was completed and summarized in July 1971, for use in conjunction with the August Crop Report. Objective Yield tracts were preselected for the survey and visited at the time of the first Objective Yield Survey late in July while all other update tracts were enumerated the first and second week in July. A total of 11,090 tract operators were contacted to obtain changes in plantings that occurred after the June Enumerative Survey.
3. Multiple Frame Livestock and Poultry Surveys: These surveys utilize two frames: (1) A list of farms stratified by size of livestock operation, and (2) the area sample of segments used in the June and December Enumerative Surveys. Farms identified in the area sample are matched with the list frame. Area sample farms that are not on the list are identified as nonoverlap tract operators. These operators provide data for the livestock estimates for farms that are not represented by the list. Since both surveys are conducted concurrently in June and December, considerable attention was given to sample design and survey procedures that would simplify their operation, yet still maintain the efficiency of each. Procedures for reducing the time required to establish the nonoverlap domain were developed and an attempt was made to reduce the reporting burden on area tract operators.

There were 16 states in the Multiple Frame livestock program in fiscal year 1972. Ten states (Iowa, Illinois, Missouri, Kansas, Nebraska, Indiana, Ohio, South Dakota, Minnesota, and Wisconsin) made quarterly hog and January 1 and July 1 cattle estimates. Florida, New Mexico, Mississippi, California, Tennessee, and Wyoming made cattle estimates on January 1 and July 1.

Texas also conducted multiple frame surveys in connection with its county estimates program for cattle, hogs and sheep. These expansions were used in adopting State estimates for Texas.

To gain experience in applying multiple frame concepts to estimating chicken inventories and monthly layers, a special project involving three States was instituted December 1, 1971. In conjunction with the regular December 1 inventory survey, Virginia, Alabama and Arkansas conducted a survey of all flocks above a specified size. The December

Enumerative Survey area frame was used to test list completeness and to estimate the number of birds in flocks not on the list frame. Probability samples were selected for monthly surveys utilizing sample rotation throughout the year. This served to reduce respondent fatigue and provided more up-to-date control data for most list units at intervals during the year.

4. Objective Yield Surveys:

- a. Wheat, Corn, Cotton and Soybeans. Objective Yield Surveys for wheat, corn, cotton and soybeans continued in the major producing states. Sample size was unchanged from the previous year with some shifts in allocation between states in the interest of efficiency. There were 17 states in the wheat program with 2,140 samples, 19 states for corn with 3,200 samples, 14 states for cotton with 2,510 samples and 14 states for soybeans with 1,675 samples. National training schools were held in Mobile, Alabama for 1971 crop corn, cotton, and soybeans, and in San Antonio, Texas for 1972 crop wheat. Each state supervisor conducted enumerator training schools in his state. About 700 enumerators were required to interview farm operators and make field counts and observations. Results from these surveys were used as the major yield indicator for mid-year production forecasts.

In Texas the wheat sample was drawn from fields reported in the fall probability mail survey for the first time. This selection provided a broader base and less clustering of samples than the previous method of selecting all fields from the December Enumerative Survey.

Fertilizer data relating to kind and application rates were obtained for wheat, corn, cotton and soybeans at the request of ERS. Information on application of pesticides to corn fields was also obtained on all of the corn samples for ERS.

A special corn yield validation study was conducted in 80 sample fields in Iowa and Illinois. The purpose of this project was to measure the difference between the net yield obtained by objective estimating procedures and the net yield derived from actual weighed production. In addition, data were provided to evaluate the differences of net yields when corn was harvested in the ear versus shelled form.

The 80 corn validation samples were selected from regular corn objective yield samples, half of which were to be harvested in the shelled form and half in the ear form. Observations were taken on 24 units within each "weighed yield area" which covered approximately one acre of corn. Weights of corn harvested from the sample areas were determined on local elevator scales. Results from the studies were available for use in preparing the Annual Crop Summary.

- b. Potatoes. The SRS appropriation for fiscal year 1972 included a portion of the funds required for potato acreage and objective yield surveys and a research project on shrinkage and quality losses of the crop while in storage.

In the spring of 1972, a multi-frame probability acreage survey was conducted in the 12 major fall producing states. List frames were developed in each state and incompleteness estimated from the June Enumerative Survey. Additional JES area segments were added in the potato growing districts of Minnesota, North Dakota and Washington to aid in measuring list incompleteness. Results of the survey were used in setting 1972 planted acreage estimates.

Funds permitted the initiation of an objective yield survey in Minnesota, North Dakota, Washington and Oregon. Objective yield surveys

were continued in Maine, Wisconsin and Idaho during the fall of 1971 using matching funds from State and Federal sources and provided the primary yield indicator. The Maine and Idaho projects were supplemented with the additional Federal funds. The seven states were assigned 1305 samples.

The potato stocks research project to develop a method for measuring quality and weight loss of potatoes in storage was conducted in the Red River Valley area of North Dakota and Minnesota. Survey results will provide the basis for continuing research toward the goal of developing practical survey procedures.

- c. Tart Cherries. Funds for an operational tart cherry objective yield survey in Michigan were provided by the Michigan State legislature. Emphasis was placed on forecasting production as of mid-June. A sample of 300 blocks (orchards) was selected. Despite a late season and a June freeze, survey results were encouraging. The estimate was of considerable significance to the tart cherry industry. Based on the level of supply, a set-aside of 15 percent was declared by the Cherry Administrative Board.

In addition to providing data for the mid-June forecast of production, data were collected to update forecasting parameters and to determine harvesting losses.

5. Quarterly Agricultural Labor Surveys:

These multiple frame surveys included a sample of resident farm operators from the June Enumerative Survey and a sample of farm operators who made social security payments for farm laborers. Each quarter resident farm operators selected from the June Enumerative Survey were mailed questionnaires and the non-respondents were contacted by telephone or personal interview. The list frame sample operators were enumerated by personal visit or telephone.

During the July quarter, 9,200 observations were made in order to obtain data for the Employment and Standards Administration, U.S. Department of Labor. The results of the July survey were submitted to Congress by the Department of Labor in 1972, in the form of a study of the economic effects of proposals to increase the minimum wage under the Fair Labor Standards Act and of the feasibility of extending coverage to additional workers. Sample size during the last 3 quarters was restricted to 4,000 observations per quarter. The sample was designed to provide data for selected wage rate items for California and the United States.

6. Quarterly Probability Farm Grain Stocks Surveys:

The probability farm grain stocks survey was conducted during all four quarters in the 12 North Central States. The sample was selected from area tracts in the June 1971 Enumerative Survey. The sample tract operations were surveyed by mail, telephone or personal interview. An estimate of total production of small grains (wheat, oats, barley, rye) and flaxseed was obtained in October while corn, grain sorghum and soybean production was obtained in January.

B. Activities to Provide Additional Data and Services

1. Bird Damage Survey: A special survey of blackbird damage in cornfields was conducted for the Department of Interior, Fish and Wildlife Service. Data were collected in connection with the regular corn objective yield survey. A special questionnaire was used to obtain measurements of damage on all ears for objective yield units at the time of harvest. These

data were made available to the Fish and Wildlife Service for summarization as collected.

2. Farm Production Expenditure Survey: A national farm production expenditure and pesticide use survey was conducted to provide current data for improving the Department's estimates of farm income and for updating the weights used in the Parity Index. The weights used currently are based on data collected in 1956. Approximately 8,600 usable questionnaires were tabulated from a sample of 2,183 area segments and a list of 6,353 large farm operators. The area segments yielded about 4,000 completed questionnaires and the list supplied about 4,600 questionnaires. Data collection started in early February and was largely completed by mid-April. Editing and summarization will continue into Fiscal Year 1973.

3. White Corn Acreage and Production Surveys: A program of white corn estimates was continued in the 10 major white corn producing States. Estimated planted acreage was included in the July 1971 Crop Report and final acreage and production estimates were reported in the Annual Crop Summary. The 1972 March Intentions Report included white corn for the first time.

Crop estimates were derived for June and December from a list frame (9,000 growers), enumerative survey nonoverlap tracts (250 tracts), and from 300 special screening segments.

4. Mink Survey: In April 1972 lists of mink producers were updated for the third annual survey of mink production. A special mink screening question for new operators was included on the June Enumerative Survey. The entire list of mink producers was surveyed by mail, telephone or personal interview.
5. Weekly Weather and Crop Bulletin: Publication of a National Weekly Weather and Crop Bulletin was continued in cooperation with the U.S. Department of Commerce. Crop comments are supplied by SRS field offices and wired to Washington, D. C. Rainfall, temperatures, and other related weather information are supplied by the Environmental Data Service. This publication has wide public interest, for it relates to current conditions and progress of crops and helps bridge the time gap between the monthly crop reports. By the end of fiscal year 1972, preparations were well underway for the Centennial Weather and Crop celebration. This was to commemorate 100 years of cooperation among the various agencies and private citizens responsible for reporting, summarizing and publishing the weather and crop data.
6. Special Cooperative Federal-State Projects: During Fiscal Year 1972, 17 States conducted special surveys concerning livestock or poultry in response to State needs. Surveys included horse inventories, livestock loss surveys, special cattle on feed surveys, feeder pig surveys, livestock slaughter plants survey, egg laying operations survey, catfish production and others.

Also, the Pacific Northwest Wheat Project was continued in the three Pacific Northwest States--Washington, Oregon and Idaho--during the year. The purpose of the project is to develop estimates of white wheat utilization and available supplies for export during the marketing year. The work is carried on with funds from the following groups: Oregon and Washington Wheat Commission, Oregon and Washington Departments of Agriculture, and Pacific Northwest Grain Export Association.

C. Activities to Review Commodity Programs.

1. Commodity Program Modifications:

- a. Field Crops. Implementation of the field crop program modifications as initiated in FY 1971 was completed. The revised program of production forecasts became effective with the July 9, 1971 Crop Production Report. The "limited forecast" concept was inaugurated. States that

make a minor contribution to the U.S. total production for a specific crop provide a forecast of production in the initial forecast month only. This forecast is continued for the succeeding monthly forecasts and revised, if necessary, at the end of the season in the Annual Crop Production Summary.

- b. Vegetables and Potatoes. Proposed modifications of the fresh market vegetable, processing vegetable and potato statistical programs were circulated to producers, trade associations, State and federal government agencies, press and others that could be assumed to have an interest in such data. Direct distribution was made primarily by each SSO, with National organizations contacted by the Washington office. Much broader coverage than direct mailing was received for some parts of the proposed modifications, especially potatoes, in trade papers and news letters. Response to vegetable and potato program modifications was generally favorable except for a few proposed changes. Procedures for implementing the modifications are scheduled to begin in January 1973.
- c. Seed Crops. Proposed changes in the field seed crop estimating program were distributed to seed producers, dealers and other data users throughout the country. In response to data users, the initial program was reevaluated and some proposed modifications were changed. The revised field seed program was presented to the Statistics Committee of the American Seed Trade Association in June 1972. The revised program adopted in June 1972 eliminates seed estimates for minor States, discontinues growing season forecasts for 7 seed crops, discontinues all estimates for 2 seed crops, and adds Oregon to the orchardgrass seed estimating program.
- d. Livestock, Dairy and Poultry. Recommended program changes and modifications for livestock, dairy and poultry programs were sent to data users in May 1971. Users were asked to review the recommendations and submit changes by August 1, 1971. An adopted set of changes was sent to related industry users in late October. These changes were implemented beginning in January 1972 and will be completed during the first part of FY 1973.
- e. Honey. A September 1 honey survey was initiated in 20 major States for commercial production from apiaries of 300 colonies or more. The honey industry had requested an early indication of the size of the honey crop. This report, issued September 1971, replaced the July report which provided estimates of number of colonies only.
- f. Cold Storage. Five new frozen vegetable items were added to the Cold Storage Program beginning January 1, 1972. These were: (1) broccoli spears, (2) broccoli, chopped and cuts, (3) okra, (4) blackeye peas, and (5) southern greens.

2. Historical Revisions:

- a. Potatoes and Sweetpotatoes. Review of potato and sweetpotato estimates for the years 1964-69 was completed. Revised estimates were published in July 1972 in Statistical Bulletin No. 490. Revisions in the historic potato estimates were relatively limited--acreage and production revisions at the National level were less than 1 percent for many of the 1964-69 years. Sweetpotato acreage revisions ranged from .2 to 8.0 percent with production estimates changed .2 to 1.9 percent from preliminary levels.
- b. Livestock and Poultry. The 1964-69 review for livestock and poultry estimates was completed following publication of the last State report by the Bureau of the Census.

The National Commodity Board approach was used to review national and regional livestock estimates. The National Board consisted of two statisticians from State offices and four statisticians from Washington, D. C. State office personnel were also utilized to review the State estimates following National Board action.

3. Discontinuance of Non-Probability Mail Livestock Surveys:

- a. Hog and Pig Surveys. Non-probability mail surveys were discontinued in South Dakota, Minnesota, Wisconsin, Indiana and Ohio, effective with the March 1972 report. These 5 States initiated Multiple Frame hog surveys in March 1971 and continued the non-probability mail surveys for one year to provide over-lap between the two procedures.
- b. Cattle Surveys. Non-probability mail surveys for cattle inventory and calf crop were discontinued beginning with December 1971 in Nebraska, Iowa, Illinois, Kansas, Missouri and Texas and in June 1972 in Ohio, Indiana, Wisconsin, Minnesota, South Dakota, Florida, Tennessee, Mississippi, Wyoming, New Mexico and California. Multiple frame data for January 1, 1972 were available for 17 States.

4. Discontinuance of Egg Products Survey: The new Egg Products Inspection Act which was effective July 1, 1971, requires Federal Inspection and recording of data for all egg breaking and drying plants. This eliminated the need for SRS to survey non-federally inspected plants. Under the new act, inspectors collect the data published in the SRS Egg Products Report. The data are summarized by AMS and published by SRS.

The Egg Products reports are issued at approximately 4-week intervals and cover 4-week periods except for the reports providing data for the periods ending June 30 and beginning July 1. The two irregular reporting periods are caused by the annual reporting period of egg products being on a fiscal year basis beginning July 1 and ending June 30.

5. Discontinuance of Chicago Dairy Office: The Chicago Dairy Office was closed on April 30, 1972. Collection of monthly data and preparation of state estimates for dairy product production and related statistics were transferred to State Statistical Offices. Shifting the responsibility for monthly surveys to all State Statistical Offices eliminated considerable duplication in reporting. Monthly questionnaires were changed to collect all product data, plant receipts, milk prices and fat tests on one questionnaire.

The weekly reports on butter and American cheese production were transferred from the Chicago Dairy Office to the Wisconsin State Statistical Office, beginning with the week ending March 9, 1972. The Wisconsin Office continued the weekly survey of a nationwide sample of butter and cheese plants as a basis for regional and U.S. estimates.

6. Transfer of Responsibility for Prices Paid by Consumers for Fluid Dairy Products: Beginning in May 1972, responsibility for collection of data on current prices paid by consumers for milk and other fluid dairy products was transferred from Washington, D. C. to State Statistical Offices. State Statistical Offices now survey milk distributors and chain-store contacts in each market. Current data on Class I prices paid by dealers and blend prices to producers continue to be collected from Washington, D. C.

7. Changes in Cotton Reports:

- a. Legislation Enacted. Legislation to change the existing U.S. Code governing the release date and time for cotton reports so that cotton estimates could be issued with the monthly crop report was sent to the Congress in January 1972. Proposed legislation was subsequently amended to add a January 1 and February 1 Census ginning report. The bill was passed and signed into law on June 30, 1972.

- b. Cotton Bale Weight Changed. The cotton industry shifted to a net weight basis for trading cotton in 1971; thus cotton production forecasts and estimates were changed from a 500-pound gross weight bale to a 480-pound net weight bale. The shift to a net weight basis on the domestic cotton market caused average bale weights to increase considerably in some sections of the cotton belt. Following a request from SRS and the National Cotton Council, the Bureau of the Census agreed to obtain bale weight information as part of the October 1, November 1, and December 1 Census Ginners Report. Bale weight data were helpful in converting Census data on running bales ginned to SRS production estimates based on a 480-pound net weight bale.

8. Discontinuance of Selected Fruit and Tree Nut Disposition Estimates:

Beginning with the 1971 crop, estimates of the quantity of fruit and tree nuts used on the farm where produced (home use) were discontinued. Previously published estimates for 1970 were revised to reflect the discontinuance of home use estimates so that statistics presented in the Fruits, Part I and Part II bulletins and the Tree Nut Bulletin would be on a comparable basis. Quantity sold and value of sales estimates were discontinued for fruit and nut crops as a part of the change in procedure. An overall saving in time spent in editing, processing, preparing and reviewing fruit and nut disposition estimates will accrue to the Agency from discontinuance of home use estimates.

9. Changes in Burley Tobacco Surveys: Changes in the burley tobacco program to a "Poundage Quotas" system resulted in some adjustment in the SRS estimating program. ASCS check data on acreage are no longer available, thus SRS must place complete reliance on sample surveys for estimating tobacco acreage. Under this program a producer may carry over excess production for market during the following season. Therefore, to utilize tobacco marketing check data the amount of carryover is needed. Questions were added to burley tobacco inquiries to measure carryover of 1972 burley tobacco.
10. Coverage Survey of Cucumbers for Pickles: A special survey was conducted in December to determine the amount of "overnites" and whether they were included in SRS estimates. An "overnite" is defined as cucumbers naturally processed (no heat applied) and kept under refrigeration until sold. No pasteurization is accomplished or preservatives added. Results indicated "overnites" make up about 5 percent of total pickle production and about one-half of the "overnites" production is normally included in SRS cucumber for pickles estimates.
11. Prices Paid Index Study: SRS contracted with the University of Minnesota for a research project to calculate and evaluate the effect of new quantity weights on the farm production component of the prices paid index and to analyze procedures used in collecting and computing average prices.

During FY 1972, the feed and the building and fencing components of the prices paid indexes were studied. The study of the feed component was completed with a preliminary report presented in May and the final report submitted in July. The collection of information and data for the building and fencing materials study has been completed; a preliminary report has been prepared.

D. Activities to Expedite Processing and Release of Reports:

1. Automation of Surveys and Reports: Progress in automating systems for processing data to improve survey results and speed up release dates continued in fiscal year 1972. There are now 67 systems in operation for processing

and tabulating agricultural data in Washington, D. C. These systems contain 423 computer programs. Many of the systems contain programs that provide camera copy for statistical reports. Major attention was given to generalized systems that could be used in both the State Statistical Offices and Washington, D. C., for major surveys. Four projects, Mail List System, Prices Received System, Generalized Edit, and Multi-frame Survey Summary Systems have been completed and are now being installed in the SSO's. Additional projects for development of generalized summary systems have been identified and preliminary work is underway to develop the specifications required.

All state offices with the exception of Alaska have access to and are doing portions of their survey processing work on computers. By the end of June 1972, eight SSO's had rapid data transmission terminals in their offices. These terminals are wired to off-site computers for remote job entry processing. The terminals are equipped with card readers, rapid printers and CRT control units. The terminal capabilities have resulted in quicker turnaround on survey processing, faster job completion, and reduced printing costs. These terminals have compatibility of equipment and have saved programmers substantial amounts of valuable time in writing and testing new programs by developing programs centrally that can be used in a large number of states. A large number of SRS reports in Washington, D.C. are being processed via a terminal recently installed in the Washington, D.C. Data Services Branch. In addition, several Random Access (RAX) devices linked to the Washington Data Processing Center have greatly enhanced the processing of methods studies and research projects.

2. Rapid Data Transmission: A facsimile network was initiated in September 1971 on a test basis with machines installed in the 12 North Central States and Washington, D. C. In April 1972, machines were installed in 12 additional states as improved operational procedures were developed. The system is being utilized heavily for transmission of releases and centrally summarized survey data, and is being used selectively on nonspeculative survey estimates and other data being submitted from State Statistical Offices to Washington, D. C.

To help provide users with more timely crop and livestock releases, the Agency has put in operation a special air mail request service. This service is designed to insure that releases reach users the day after their publication if the regular mail service cannot meet this requirement. Users reimburse the Agency for this special service on an annual basis.

STATISTICAL RESEARCH AND SERVICE

Current Activities and Direction of Emphasis: Most funds used for research and service are directed toward improving the Agency's crop and livestock estimating techniques. Considerable emphasis is placed on improving sample survey designs as well as testing new and improved forecasting and estimating techniques. Other activities include the review, coordination and monitoring of data gathering surveys conducted by the Department. This involves (1) the review of all proposed statistical forms and survey plans requiring Office of Management and Budget clearance, and (2) coordination of all inter- and intra-department programs for the improvement of agricultural statistics and related data. Special surveys are conducted on consumer opinions and attitudes related to agricultural products used in the home.

Selected Examples of Recent Progress

A. Statistical Clearance and Consultation

As the Department's designated liaison agent with the Office of Management and Budget for Federal Reports Act clearance matters, 519 requests for clearance of forms and reporting requirements were handled during Fiscal Year 1972. Staff assistance was provided to a number of Department agencies in designing samples and developing survey plans. Special activities of the staff during the fiscal

year included: (1) review of data collection and analysis by Department agencies for conformance to OMB guidelines for reorganization of statistical activities; (2) coordination of Departmental interests in initial plans of the Census Bureau relating to the 1974 Census of Agriculture; (3) preparation of a report for the Office of Information of survey work likely to be contracted for by Department agencies with outside agencies during 1972; and (4) coordination of preparation of updated materials for the 1972 Statistical Abstract and the third edition of "Historical Statistics of the United States."

B. Operational Programs Support Research

1. Sampling Material and Work:

- a. SRS Area Frames. Iowa State University continued work on the construction of land use area frames. The frame for Missouri was completed during the year and is available for the selection of sample segments. Work is now underway on frames for Nebraska, Arkansas, and Oklahoma.
- b. Dominican Republic Area Frame. Construction of an area frame for the Dominican Republic to use for coffee and crop and livestock surveys was completed. A coffee sample of 160 segments was selected and used by the country in its first coffee production survey. A sample of 320 segments for crop and livestock surveys was selected and materials provided for the country's first area survey in 1972.
- c. Expenditure Surveys. Contact prints for 1,550 of the 2,560 Farm Production Expenditure Survey segments were secured and prepared for the 1972 Survey. Work on the selection and preparation of materials for 2,500 area segments for the Family Living Expenditure Survey was completed.
- d. Sample Segments for Hidalgo County, Texas. In March of 1972, 200 segments were selected in Hidalgo County, Texas and drawn on county highway maps. These segments will provide ground truth data for the ERTS program for the Agricultural Research Service.
- e. June Enumerative Survey: Preparation and maintenance of materials for the June Enumerative Survey continued. Approximately 550 area segments were selected in the range areas of the 11 western States. About 1,500 clusters of 4 segments each were selected in the cultivated stratum. Approximately 250 problem segments were reviewed and corrected. A change was made from the master sample frame to the land use area frame in a few States. Indian lands in New Mexico and Arizona were restratified.

2. Response Error Research:

- a. Wisconsin Response Bias Project. A project was conducted in Wisconsin to determine the nature and magnitude of response errors and biases associated with a variety of interviewing techniques. Data reported by farmers were compared with actual milk plant receipts.
- b. Evaluation of Response Error by Type of Respondent: About 35 percent of the respondents providing information for the June and December Enumerative Surveys are not the tract operators. Approximately 900 interviews were obtained in 5 States after the 1971 June Enumerative Survey to test the hypothesis that no differences exist between tract averages reported by type of respondent. Univariate and multivariate analyses are now complete and a report is being prepared.

3. Crop Yield Forecasting and Estimation:

- a. Corn: Studies of the relationships between plant characteristics measurable on August 1 and final weight of grain per plant continued during

fiscal year 1972 in Iowa, Ohio, and Maryland. Results indicate that counts or measurements of three variables each, for plants with or without ear shoots, would have resulted in multiple correlation coefficients of .6 to .8 within each year. However, relationships varied significantly between the two years.

- b. Wheat: An optimum plot size study indicated that a sampling unit smaller than the present 26.1 inches would be more efficient. The optimum number of rows per unit would be three, as presently used. Metal frames of 14.3 and 21.6 inches in length are being tested during the 1972 growing season.
- c. Pecans: The goal of pecan research efforts is to forecast size of crop for trees which cannot be sampled by conventional techniques. Only a few, if any, limbs per tree can be reached for nut counts on mature pecan trees. Counts of nuts from photos, expanded to total tree estimates, were significantly correlated with final production in 1972.
- d. Grain Sorghum: A tentative model for forecasting grain sorghum production was finalized during FY 1972. Results of previous research studies and work finished in 1972 were reviewed to determine what variables should be included in the model.

C. Research Toward Improving Estimating Techniques

- 1. Remote Sensing: The Agency was selected by the National Aeronautics and Space Administration (NASA) to study the potential use of satellite imagery as a method of collecting agricultural data. The objectives of the investigation are to: (a) Develop methods of identifying crop species from space imagery within the context of multistage and multiple frame sampling, and (b) develop methods of estimating crop acreages by extracting information from space imagery.

Study sites in connection with the ERTS-1 Project were selected in Kansas, South Dakota, Missouri, and Idaho. These sites provide a variety of crops grown in different locations and under different conditions. Within the study areas ground truth data were collected from existing June Enumerative Survey segments. The information collected from the June Enumerative Survey served as the base, and was updated with monthly visits starting in August and continuing until October 1972. In addition to the satellite data and ground data a subsample of JES segments was photographed from high flying aircraft. All three sources of data are evaluated individually as a means of collecting agricultural data. The three sources will be combined in analysis to test whether the combined data will provide better crop estimates than any one source.

- 2. Crop Identification: A study was started in California to develop improved methods of crop discrimination by means of statistical analysis of digitized aerial photographs. The objective of the study was to determine whether row spacing and reflectance characteristics of crops could be used as principal features to improve existing crop discrimination methods. For this experiment, a variety of crop fields in California was selected and photographed. Within the selected fields, measurements were made of the row and plant spacing.
- 3. Automated Fruit Counting: Using ground photograph (35 mm) of fruit trees, an attempt was made at developing a means of counting the number of fruit on a tree by a computer. The photograph was digitized using a microdensitometer and a program was written to isolate the fruit from the rest of the tree background. Limited success had been obtained in discriminating between fruit and tree background.

D. Consumer Opinions and Attitudes about Agricultural Products

1. Cotton Survey: Three studies of consumers' opinions and attitudes affecting their purchase of cotton and competing fibers in various end-uses are underway. Data from a survey on men's reactions to fibers in selected clothing items are being analyzed. Interviewing among purchasers of yard goods for home sewing was completed recently. A questionnaire on mothers' opinions of fibers in children's clothing is being developed. One section investigates their reactions to flammability and flame-retardant treatment of children's clothing.
2. Dairy Survey: Preliminary results from a survey on homemakers' use of and opinions about dairy products indicate widespread misinformation about their fat content--misinformation which adversely affects the consumption of some dairy products. For example, regular whole milk, which actually is about 3.5 percent fat, was incorrectly described as containing 20 percent or more fat by 7 respondents in 10.
3. Survey Research for Other USDA Agencies: Two survey research projects were undertaken for the Food and Nutrition Service for purposes of assisting the planning and development of agency programs. A nationwide survey of student enrollment and participation in the National School Lunch Program by racial composition among public and private day schools and a nationwide survey of food distribution to residential and non-residential public and private institutions were conducted. Planning for both studies began July 1971, and completed reports were submitted to FNS in September 1972. A sample of 650 schools and 400 institutions was selected on a nationwide basis.

Planning for a survey of minority group participation in ASCS community and county elections in the Southeast was begun in May 1972. The proposed survey will be conducted for the Agricultural Stabilization and Conservation Service.

4. Fruit and Vegetables: Group focus interviews for a nationwide survey of homemakers' preferences, usages, and buying practices for selected non-citrus fruits and fruit products were conducted in Syracuse, New York and Cincinnati, Ohio. These interviews were undertaken to obtain attitudinal information to be used in constructing a pretest questionnaire.

The questionnaire for the Survey of Consumers' Preferences, Usages, and Buying Practices for Selected Vegetables required extensive testing before being finalized. The required number of sample questionnaires has now been completed and data analysis began in September.

5. Vegetables and Grain: Results were published on a nationwide survey of homemakers' preferences and buying practices for selected potato, rice, and wheat products.
6. Sensory Evaluation Laboratory: Sensory evaluation tests were conducted on orange juice crystals, frozen concentrated orange juice, frozen concentrated grapefruit juice, grape drink, and tomato juice. A cooperative agreement, in which the Florida Department of Citrus contributed funds to SRS for the conduct of a specific series of experiments, was in effect for FY 1972. A similar agreement is being proposed for FY 1973.

OTHER ACTIVITIES IN THE STATISTICAL REPORTING SERVICE

A. Washington Data Processing Center

As of October 1, 1972, activities concerned with programming and processing of data, formerly done by SRS through WDPC, have been transferred to the Office of Information Systems, USDA.

UNITED STATES DEPARTMENT OF AGRICULTURE
 STATISTICAL REPORTING SERVICE
 CROP REPORTING BOARD
 WASHINGTON, D.C.

LOCK-UP REPORTS

1973 REPORTS 1973

RELEASE HOURS: Cramberry Production - 1:00 P.M.
 All Other Listed Reports - 3:00 P.M.

DAY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	DAY
1	Holiday	Cattle	Egg Products	Sunday	Fruits, Non-Citrus-Prod., Use and Value, Part I *	Poultry Slaughter and Processing	Sunday	Tree Nuts-Prod., Use and Value	Saturday	Citrus Fruits-Prod., Use and Value	Com. Fertilizers (Preliminary)	Saturday	1
2		Egg Products; Poultry Slaughter and Processing	Poultry Slaughter and Processing	Egg Products		Saturday	Fruits, Non-Citrus-Prod., Use and Value, Part II *	Poultry Slaughter and Processing	Sunday		Poultry Slaughter and Processing	Sunday	2
								Field Seed		Poultry		Poultry	

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2. Dairy Survey: Preliminary results from a survey on homemakers' use of and opinions about dairy products indicate widespread misinformation about their fat content--misinformation which adversely affects the consumption of some dairy products. For example, regular whole milk, which actually is about 3.5 percent fat, was incorrectly described as containing 20 percent or more fat by 7 respondents in 10.
3. Survey Research for Other USDA Agencies: Two survey research projects were undertaken for the Food and Nutrition Service for purposes of assisting the planning and development of agency programs. A nationwide survey of student enrollment and participation in the National School Lunch Program by racial composition among public and private day schools and a nationwide survey of food distribution to residential and non-residential public and private institutions were conducted. Planning for both studies began July 1971, and completed reports were submitted to FNS in September 1972. A sample of 650 schools and 400 institutions was selected on a nationwide basis.

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UNITED STATES DEPARTMENT OF AGRICULTURE STATISTICAL REPORTING SERVICE CROP REPORTING BOARD WASHINGTON, D.C.

LOCK-UP REPORTS

1973 REPORTS 1973

RELEASE HOURS: Cereals Production - 1:00 P.M.
All other Listed Reports - 3:00 P.M.

DAY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	DAY
1	Holiday	Cattle	Egg Products	Sunday	Poultry, Non-Citrus-Food, Use and Value, Part I & II	Poultry Slaughter and Processing	Sunday	Tree Nuts-Prod., Use and Value	Saturday	Citrus Fruits-Prod., Use and Value	Com. Fertilizers (Preliminary)	Saturday	1
2		Egg Products; Poultry Slaughter and Processing	Poultry Slaughter and Processing	Egg Products		Saturday	Poultry, Non-Citrus-Food, Use and Value, Part II & III	Poultry Slaughter and Processing	Sunday		Poultry Slaughter and Processing	Sunday	2
3		Saturday	Saturday		Poultry Slaughter and Processing	Sunday	Poultry Slaughter and Processing	Field Seed	Holiday	Poultry Slaughter and Processing	Saturday	Poultry Slaughter and Processing	3
4	Gulery; Poultry Slaughter and Processing	Sunday	Sunday	Gulery; Chickens & Eggs; Incl. Broilers-Food, Disp., and Income	Field & Seed Crops-Prod. (Disp. & Value); Gulery	Milk Production	Holiday	Saturday			Sunday		4
5		Gulery	Gulery		Saturday	Gulery	Gulery	Sunday	Gulery		Gulery		5
6	Saturday		Com. Fertilizers - At. Prod. & Weekly Place-ments - 1972		Sunday			Chicken Claver (On) & Stocks of Rye-grass Seed; Gulery	Saturday				6
7			Poultry-Prod., Disp., & Income	Saturday		Saturday	Saturday	Veg.-Fr. Market	Sunday			Egg Products; Veg.-Fr. Market	7
8	Veg.-Fr. Market; Egg Products; New York Cabbage Stocks		Veg.-Fr. Market	Sunday	Com. Fertilizers (Final); Veg.-Fr. Market	Crop Production; Farm Labor	Sunday	Veg.-Processing; Veg.-Fr. Market	Saturday	Holiday	Egg Products	Saturday	8
9	Poultry-Broiler (No. Inventory Dec. 1, 1972 & Number Turkeys Slaughtered 1972 & Intentional 1973)	Crop Production; Farm Labor; Poultry Stocks	Crop Production; Poultry Stocks	Crop Production; Poultry Stocks; Veg.-Fr. Market		Saturday	Veg.-Processing; Veg.-Fr. Market	Crop Production; Farm Labor	Sunday	Veg.-Fr. Market	Crop Production; Farm Labor; Veg.-Fr. Market	Sunday	9
10	Crop Production; Poultry Stocks	Saturday	Saturday	Milk Production	Crop Production; Farm Labor	Sunday	Crop Production	Milk Production	Veg.-Processing		Saturday	Crop Production; Farm Labor; Poultry Stocks	10
11	Milk Production	Sunday	Sunday	Farm Labor	Milk Production	Milk Production	Milk Production	Saturday	Crop Production; Farm Labor	Egg Products; Red Clover Seed	Sunday	Milk Production	11
12	Farm Labor	Milk Production	Milk Production	Meat Animals - Farm Prod., Disp., & Income	Saturday	Cattle & Calves on Feed	Farm Labor	Sunday	Milk Production	Crop Production; Farm Labor	Milk Production	Cattle & Calves on Feed	12
13	Saturday	Cattle & Calves on Feed	Farm Labor; Cattle & Calves on Feed	Flowers & Potatoes Plants; Wool & Meat Prod. & Value	Sunday			Cattle & Calves on Feed	Saturday	Cattle & Calves on Feed	Cattle & Calves on Feed	Cattle & Calves on Feed	13
14	Sunday			Saturday	Cattle & Calves on Feed		Saturday	Cattle & Calves on Feed	Egg Products	Sunday			14
15	Crop Production Annual Summary; Seed Crops - Preliminary Estimates		Prospective Plantings, Mar. 1; Sheep & Lambs on Feed, Mar. 1 (Incl. Early Lamb Crop)	Sunday		Cold Storage	Sunday		Saturday	Milk Production	Cucumbers for Pickles Stocks; Crop & Lambs on Feed; Cold Storage	Saturday	15
16	May 1972 Annual Summary; Sheep & Lambs on Feed, Jan. 1	Cold Storage; Eggs, Chickens & Turkeys-Current No. Reports; Eggs, Chickens & Turkeys-Statistics 1971 & 1972 Layer Numbers & Egg Levels	Cold Storage; Eggs, Chickens & Turkeys-Current No. Reports; Eggs, Chickens & Turkeys-Statistics 1971 & 1972 Layer Numbers & Egg Levels		Meat Stocks - 1972 Annual Summary; Cold Storage	Saturday		Fall Yarns Seed (On) Cold Storage	Sunday		Eggs, Chickens & Turkeys	Sunday	16
17	Onion Stocks; Cold Storage; Number of Farms & Land in Farm	Saturday	Saturday	Cold Storage		Sunday	Fall Yarns (Southern Sta.) Seed; Cold Storage	Veg. Seed Stocks; Eggs, Chickens & Turkeys	Cold Storage	Cold Storage	Saturday	Cold Storage	17
18	Eggs, Chickens & Turkeys (Incl. Chicken Inventory Dec. 1, 1972)	Sunday	Sunday	Eggs, Chickens & Turkeys; Cattle & Calves on Feed	Meat Stocks; Eggs, Chickens & Turkeys		Eggs, Chickens & Turkeys; Cattle & Calves on Feed	Saturday	Meat Stocks & Processing; Seasonal Reps.; No. Stocks; Eggs, Chickens & Turkeys (Incl. Turkey Broiler No. Inventory)			Eggs, Chickens & Turkeys	18
19	Prospective Plantings, January 1; Meats Stocks; Field Milk & Cream	Holiday	Veg. Seed Storage & Production; Regional Cold Storage Holdings	Saturday	Eggs, Chickens & Turkeys			Sunday			Annual Summary-Veg. Processing		19
20	Saturday	Meat Stocks	Meat Stocks; Eggs and Pigs	Meat Stocks; Field Milk & Cream	Sunday	Meat Stocks; Field Milk & Cream	Meat Stocks; Field Milk & Cream	Meat Stocks; Field Milk & Cream	Meat Stocks; Field Milk & Cream	Saturday	Meat Stocks	Meat Stocks; Field Milk & Cream	20
21	Sunday	Field Milk & Cream	Field Milk & Cream	Saturday	Field Milk & Cream	Saturday	Cranberry Prod.; Field Milk & Cream	Meats of Sheep; Hogs and Pigs	Sunday	Field Milk & Cream	Meat Stocks; Seedlings; Hogs and Pigs	Sunday	21
22				Sunday		Sunday		Meats of Sheep; Hogs and Pigs	Saturday	Holiday	Holiday	Saturday	22
23	Update by Varieties - Annual Summary	Meat Stocks & Processing	Meat Stocks & Processing		Saturday	Meat Stocks & Processing	Meat Stocks & Processing	Meat Stocks & Processing	Sunday	Meat Stocks & Processing	Sunday	Sunday	23
24	Meat Stocks	Saturday	Saturday	Meat Stocks	Sunday	Sunday	Meat Stocks	Meat Stocks	Saturday	Meat Stocks	Saturday	Meat Stocks & Processing	24
25	Meat Stocks & Processing	Sunday	Sunday	Meat Stocks & Processing	Meat Stocks & Processing	Egg Products	Meat Stocks & Processing	Meat Stocks & Processing	Saturday	Meat Stocks & Processing	Sunday	Holiday	25
26	Com. Fertilizers - No. Report			Egg Products; Com. Fertilizers - No. Report	Saturday	Cattle	Sunday	Meat Production	Sunday	Meat Production	Com. Fertilizers - No. Report	Com. Fertilizers - No. Report	26
27	Saturday	Com. Fertilizers - No. Report; Livestock Slaughter & Meat Production	Com. Fertilizers - No. Report; Livestock Slaughter & Meat Production	Livestock Slaughter & Meat Production; Com. Fertilizers - No. Report	Sunday		Com. Fertilizers - No. Report; Egg Products; Livestock Slaughter & Meat Production	Com. Fertilizers - No. Report	Sunday	Saturday			27
28		Apr. 1, Prices; Dairy Products	Veg.-Processing		Saturday	Holiday	Livestock Slaughter & Meat Production; Veg.-Processing	Livestock Slaughter & Meat Production	Saturday	Sunday	Com. Fertilizers - No. Report; Livestock Slaughter & Meat Production	Com. Fertilizers - No. Report; Livestock Slaughter & Meat Production	28
29	Eggs & Meat; Livestock Slaughter & Meat Production		Egg Products; Livestock Slaughter & Meat Production	Sunday					Saturday				29
30	Apr. 1, Prices; Dairy Products	Apr. 1, Prices; Dairy Products	Apr. 1, Prices; Dairy Products	Apr. 1, Prices; Dairy Products	Livestock Slaughter & Meat Production	Saturday	Apr. 1, Prices; Dairy Products	Apr. 1, Prices; Dairy Products	Sunday	Livestock Slaughter & Meat Production	Apr. 1, Prices; Dairy Products	Apr. 1, Prices; Dairy Products	30
31		Saturday		Apr. 1, Prices; Dairy Products	Apr. 1, Prices; Dairy Products		Livestock Slaughter & Meat Production	Livestock Slaughter & Meat Production			Apr. 1, Prices; Dairy Products	Apr. 1, Prices; Dairy Products	31

• Part I - Apples, Apricots, Bush Berries, Cherries, Figs, Grapes, Nectarines, Peaches, Pears, Persimmons, Plums, Pumpkins and Prunes.
• Part II - Apples, Apricots, Cranberries, Dates and Olives.
• C - Cereals.

PASSENGER MOTOR VEHICLES

The 1974 Budget Estimates propose the replacement of three passenger motor vehicles. All passenger motor vehicles of the agency are located in the field at the various state offices. These vehicles, as well as those obtained for use throughout the year from the General Services Administration, are used by professional statisticians, supervisory enumerators, and other field employees in conducting enumerative surveys and related work pertinent to the preparation of the crop and livestock estimates. The use of common carriers in this type of work is not satisfactory in that it is frequently necessary to visit during a short period of time numerous farms and various commercial establishments within a specified geographic area.

The three sedans proposed for replacement during 1974 are necessary to meet the transportation requirements inherent in carrying out the agency's program. The vehicles proposed to be replaced will have passed the minimum replacement standards of 6 years of age or 60,000 miles prescribed by the General Services Administration.

Age and mileage data for passenger motor vehicles on hand as of June 30, 1972 are indicated below:

Age Data			Mileage Data		
<u>Age-Year Model</u>	<u>Number of vehicles</u>	<u>Percent of total</u>	<u>Lifetime mileage (thousands)</u>	<u>Number of vehicles</u>	<u>Percent of total</u>
1965	2	13	80-100	2	13
1966	2	13	60-80	2	13
1970	4	27	40-60	1	7
1971	4	27	20-40	4	27
1972	3	20	Under-20	6	40
Total	<u>15</u>	<u>100</u>		<u>15</u>	<u>100</u>

ECONOMIC RESEARCH SERVICE

Purpose Statement

The Economic Research Service was established by Secretary's Memorandum No. 1446, Supplement No. 1, of April 3, 1961, under Reorganization Plan No. 2 of 1953 and other authorities. The Service develops and carries out a program of economic research designed to provide economic intelligence for the Department of Agriculture and other Federal decisionmakers, farmers and related industries and the general public. The findings of this research are made available to these users through research reports and through economic outlook and situation reports on major commodities, the national economy, and the international economy. The Service carries out the following major activities:

1. Farm economics research consists of a nationwide program of research dealing with the economic problems of agricultural production and resource use. Farm production economics research includes analyses of farm production costs and efficiency, use of capital, labor and other resources in agriculture, profitable adjustments in farming, and financial problems of farmers. Natural resources economics include studies of the use and management of land and water resources, including the quality of these resources, resource institutions, and watershed and river basin development problems. Economic development research includes a broad program of economic studies on development of rural areas, employment opportunities for farm and other rural people, and availability and factors affecting the availability of public and private facilities and services necessary to improve the quality of rural life, including local governments and their organization.
2. Marketing economics research includes economic analyses and research relating to the marketing of agricultural commodities, the organizational structure, practices, and performance of commodity markets from the farm to the consumer, costs and margins involved in the marketing of agricultural products, farmer's bargaining power, the economics of product quality and grade, market potentials, distribution and merchandising of agricultural products, and the economics of transportation.
3. Domestic and foreign economic analysis. Domestic economic analysis consists of economic and statistical research on agricultural prices, farm income, commodity outlook and situation, supply and consumption of farm products, and agricultural history. Foreign economic analysis includes: Studies of supply and demand and trade in farm products in foreign countries and their effect on prospects for U.S. exports; analysis of farm export programs, progress in economic development and its relationship to sales of farm products, assembly and analysis of agricultural trade statistics; and analysis of international financial monetary programs and policies as they affect the competitive position of U.S. farm products.
4. Work performed for others. The Economic Research Service performs research services for other governmental and private agencies on a reimbursable or advance payment basis. These include special studies of agricultural economics of foreign countries, special economic studies on water and land conservation programs and practices, appraisals of price-support and production control programs, studies of development in rural areas, and various types of marketing studies.

The Service functions through a central office in Washington, D.C. and a small field staff at each of 56 locations, principally the Land Grant Colleges and Universities throughout the United States. Much of the research is carried on in cooperation with State Agricultural Experiment Stations.

Available Funds and Man-Years
1972 and Estimated, 1973 and 1974

Item	Actual		Estimated		Budget Estimate	
	1972		Available, 1973		1974	
	Amount	Man-Years	Amount	Man-Years	Amount	Man-Years
Economic Research Service:						
Appropriation.....	\$16,467,000	826	\$17,826,000	768	\$17,766,000	788
Obligations under other USDA appropriations:						
Soil Conservation Service:						
Watershed planning.....	27,489	1	28,000	1	28,000	1
Watershed and flood prevention operations..	178,921	11	172,000	10	146,000	9
Resource conservation and development.....	221,187	11	227,000	11	136,000	6
River basin surveys and investigations.....	1,855,624	89	2,058,000	89	2,076,000	89
Economic development studies in Arkansas and Illinois.....	29,337	2	1,000	- -	- -	- -
Agricultural Stabilization and Conservation Service:						
For acreage studies.....	45,026	2	221,000	10	221,000	10
Agricultural Marketing Service:						
Study of surplus removal program.....	39,960	1	25,000	1	25,000	1
Extension Service:						
For low income food study:	97,491	4	100,000	4	100,000	4
Farmers Home Administration:						
For nonmetropolitan development district planning programs study..	10,000	1	25,000	1	25,000	1
For economic evaluation of the USDA water, sewer and waste disposal program in rural communities.....	60,000	3	133,000	6	133,000	6
Food and Nutrition Service:						
To evaluate effectiveness of food programs..	95,653	3	101,000	4	101,000	4
Foreign Agricultural Service:						
Foreign trade studies...	347,255	15	- -	- -	- -	- -
Office of the Secretary:						
For environmental studies:	202,418	11	- -	- -	- -	- -
Miscellaneous USDA reimbursements.....	82,762	2	144,000	7	28,000	1
Total, other USDA appropriations.....	3,293,123	156	3,235,000	144	3,019,000	132
Total, Agricultural Appropriation Bill.....	19,760,123	982	21,061,000	912	20,785,000	920
Other Funds:						
Agency for International Development:						
Training of foreign participants.....	1,080,412	52	964,000	53	964,000	53
Technical consultation and support.....	705,670	29	666,000	33	666,000	33

Item	Actual		Estimated		Budget Estimate	
	1972		Available, 1973		1974	
	Amount	Man- Years	Amount	Man- Years	Amount	Man- Years
Special projects.....	\$2,264,806	51	\$1,937,000	49	\$1,600,000	40
Subsistence, tuition, and training for foreign nationals in U.S.....	3,735,083	- -	4,000,000	- -	4,000,000	- -
Total, Agency for International Development..	7,785,971	132	7,567,000	135	7,230,000	126
Corps of Engineers:						
Studies on water waste....	23,795	1	5,000	- -	- -	- -
Dept. of Interior:						
For western U.S. water plan study.....	- -	- -	51,000	2	51,000	2
Dept. of Labor:						
Study of proposed organophosphate insecticide standard.....	- -	- -	75,000	3	- -	- -
Environmental Protection Agency:						
Economic analysis on the effects of pesticide and pollution control.....	53,344	2	78,000	4	98,000	4
Forest Service:						
Economic and environmental studies.....	36,560	2	12,000	1	12,000	1
Interamerican Development Bank.....	17,704	1	- -	- -	- -	- -
National Science Foundation:						
Study of the economic effects on agriculture of hail suppression.....	46,176	2	71,000	3	71,000	3
Miscellaneous reim- bursements	15,030	- -	183,000	8	60,000	2
Funds for work under coop- erative agreements.....	26,483	1	46,500	2	6,500	- -
Total, other funds.....	8,005,063	141	8,088,500	158	7,528,500	138
Total, Economic Research Service.....	27,765,186	1,123	29,149,500	1,070	28,313,500	1,058

ECONOMIC RESEARCH SERVICE

Appropriation Act, 1973	\$17,829,000
Budget Estimate, 1974	17,766,000
Decrease in Appropriation	<u>-63,000</u>

Adjustments in 1973:

Appropriation Act, 1973	\$17,829,000	
Transfer to General Services Administration for rental of space	<u>-3,000</u>	
Adjusted base for 1974		17,826,000
Budget estimate, 1974		<u>17,766,000</u>
Decrease in appropriation		<u>-60,000</u>

SUMMARY OF INCREASES AND DECREASE
(On basis of adjusted appropriation)

	<u>1973</u>	<u>Increase or Decrease</u>	<u>1974 Estimate</u>
Estimates of farm income and related statistical series	\$631,000	+\$115,000	\$746,000
Estimates of marketing margins	513,000	+100,000	613,000
Benefit/cost analysis of predator controls ..	275,000	-275,000	-
All other	<u>16,407,000</u>	<u>-</u>	<u>16,407,000</u>
Total available	<u>17,826,000</u>	<u>-60,000</u>	<u>17,766,000</u>

PROJECT STATEMENT
(On basis of adjusted appropriation)

Project	1972	1973 (Estimated)	Increases or Decrease	1974 (Estimated)
1. Farm economics	\$7,573,533	\$8,403,000	-\$275,000(1)	\$8,128,000
2. Marketing economics	3,967,919	4,172,000	+100,000(2)	4,272,000
3. Domestic and foreign economic analysis	4,845,308	5,251,000	+115,000(3)	5,366,000
Unobligated balance	+80,548	-	-	-
Total available or estimate ...	<u>16,467,308</u>	<u>17,826,000</u>	<u>-60,000</u>	<u>17,766,000</u>
Transfer to GSA	+3,692	+3,000		
Total, appropriation	<u>16,471,000</u>	<u>17,829,000</u>		

- (1) A decrease in farm economics due to a reduction of \$275,000 for cost/benefit analysis of predator controls. A program reduction of \$275,000 is proposed for FY 1974. These funds were appropriated in 1973 but withheld from use.
- (2) An increase of \$100,000 in marketing economics to improve estimates of marketing margins (\$513,000 available in FY 1973).

Need for Increase: The objectives are to (1) measure the cost and profit components of margins for individual key foods and major food groups; (2) monitor changes over time in marketing margins; and (3) determine the causes and impacts of these changes on marketing efficiency, returns to farmers and prices paid by consumers.

Food is one of the most important consumer expenditures and the price of food is a matter of continuing national concern. Consumers spent \$111.1

billion for U.S. farm foods in 1971, of which \$75.3 billion went to pay the marketing bill and \$35.8 billion went to farmers. Policy is directed at encouraging a food production and marketing system that offers consumers their choice of food at lowest prices consistent with a reasonable return to farmers and marketers. Assessing the role of the food marketing system in obtaining these goals requires continuous monitoring of costs, margins, prices, and productivity in farm food marketing.

Current farm retail price spreads are computed monthly for each of 65 food items. However, these data are not sufficiently detailed to identify the component parts in total or for the individual food items. Attempting to monitor food prices under the economic stabilization program has demonstrated the inadequacies of existing marketing margin data.

Thus, the focus of this research proposal is the development of data on margins, costs, and profits for individual products at each level in the marketing system. Initial efforts will be directed at the major products including red meats, broilers, milk, eggs, bread, food oils, and selected fruits and vegetables. Other products will be studied as resources permit. Availability of these data will allow analysis of the component parts of the market basket and marketing bill statistics.

In addition to identifying departures from reasonable prices at the retail level, the research will show when prices of wholesalers and processors do not adequately reflect supply conditions at the farm level. Moreover, measurement and monitoring of profits as well as labor and other costs incurred by marketing agencies at various levels of the food system will help to ascertain whether their pricing policies are reflecting something other than actual changes in costs.

The proposed research will also enable improved measures of productivity at each stage of marketing and will pinpoint where inefficiencies are occurring. Thus, a major purpose of this research is to encourage efficient performance in all aspects of marketing and maintenance of fair and equitable returns to farmers. Improved pricing policies to accurately reflect supply-demand conditions and increased productivity in marketing will benefit both the producer and consumer participants in the system.

Plan of work: As a first step, many data gaps must be filled. One of the more critical gaps is data on margins, costs, and profits for individual products at each level in the marketing system. These data will allow disaggregation and analysis of the Department's market basket and marketing bill statistics. Obtaining data on cost of labor, transportation, packaging, etc. for processors, wholesalers and retailers for the selected commodities will require extensive surveys of marketing firms. Additional resources are needed to finance these surveys and to analyze the data collected from them. Some secondary data will be purchased from the Census of Business and other data collection agencies of Government.

The new and existing data will provide a basis for cost analysis of the marketing system which will be more comprehensive than heretofore, which will be predictive, and which will provide a framework for further examination of equity and efficiency issues in marketing. This cost analysis will go further than the current marketing bill to allow evaluation of the interrelationships between channels of distribution and between the cost components for the various commodities which go to make up total marketing costs and expenditures for foods.

- (3) An increase of \$115,000 in domestic and foreign economic analysis to improve estimates of farm income and related statistical series (\$631,000 available in FY 1973).

Need for Increase: The objective is to develop new and improved measures of the sources, level and distribution of income of farmers and of returns to resources used in farm production.

Estimates of farm income, its change over time, and its distribution are among the principal statistics used in monitoring agricultural performance and in guiding farm policy decisions. The basic techniques for estimating levels and distribution of farm income were developed many years ago. Minor changes have been made over time but these changes have not kept pace with either the structural changes in the farming industry or the needs of policy makers for more detailed and accurate data. The growing importance of contract production and other forms of vertical coordination, including resource ownership and control from outside the industry in many sectors of agriculture has weakened the basic assumptions used in accounting for farm income by size of farm and resource ownership. Accurate accounts for these distributions are important for both delineation of policy objectives and evaluation of policy effects.

Capital expenses such as land and dairy herd improvements are presently treated as operating expenses chargeable against income earned in the year the expenses are incurred rather than spread over the life of the capital item and depreciated. This precludes any meaningful comparison of either capital or returns in the farming industry with those in other industries, and it precludes accurate measurement of resource productivity in agriculture.

The income estimates have been and still are a useful tool in measuring change in income from year to year. But they have become less reliable as a barometer of the welfare of the farming population or the returns to resources employed in the farming industry. For this reason they fail to meet the needs of policy makers. A primary goal of farm policy is to assure that the income of farmers and ranchers is consistent with their investment of capital and labor and with returns on investment in other segments of the economy. There is not now available, on a regular basis, data series that would identify the extent to which this goal is being achieved for different groups of farmers or for the farming industry in total. If such measures as parity of returns are to be developed on an annual basis with statistical validity, additional resources will be required. The present level of funding will not permit development and implementation of these needed changes.

Plan of work: The requested increase will be used to acquire needed data on the sources, level, and distributions of farm income from such agencies as Census and SRS. There is localized evidence of significant employment of farm resources and equipment in the production of goods and services such as recreation, construction, grain milling, etc., from which the income is neither included in farm income statistics nor identified separately as a source of non-farm income. Present farm income estimating procedure implicitly assumes that total production expenses accrue to the farm and that the cash receipts accrue only from the sale of characteristic agricultural commodities. Additional data will be acquired to identify these other receipts and their levels before they can be added to receipts from the sale of crop and livestock products, and thus make estimates of receipts consistent with estimates of expenses.

Additional data will be acquired to measure the amount of production expenses incurred for the formation of capital such as improvements in herds and land. These will be removed from production expenses, as presently measured, depreciated over the life of the capital items thus formed, and deducted from gross income as a capital consumption expense. This separation of capital formation and current production expenses will permit more accurate measurement of current income and expenses as distinguished from costs of capital formation in the industry.

Present distribution of production expenses and gross and net farm income by size of farms shows all farms with \$40,000 or more of gross sales in one group. According to present observations, \$40,000 of gross sales may represent only a farm of medium size. Additional new data will be acquired to develop accurate breaks of this group of farms into two or more categories to distinguish the performance and returns positions of medium from large sized farms. Also the data acquired for the additional revenue items and improved estimates of

production costs, as discussed above, will be woven into the estimates of income and expenses for each class in the distribution of farm sizes.

The above improvements in present series will facilitate the initiation of research to formulate such measures as resource returns and productivity in agriculture, and parity of returns positions of farmers. Components of capital formation costs will have been removed from current production expenses and presently excluded receipts from the employment of farm resources will have been added to income. These have been among the more serious data problems hampering attempts to compare incomes, resource productivity, and resource returns in agriculture with incomes and returns in other industries.

STATUS OF PROGRAM

The mission of the Economic Research Service is to develop and disseminate economic information that public and private decisionmakers can use in improving agriculture and rural America. This mission involves four primary areas: (1) Improving performance of the U.S. food and fiber industry--defined broadly to mean not only economic efficiency but also the impact on the people in this sector and the benefits for the Nation; (2) helping farmers and other rural people adjust to change and solving the consequent problems for rural areas, and land and water resource utilization; (3) improving the environment and assessing the impact of these efforts on rural areas, the food and fiber industry, and the quality of life in general; and (4) supporting foreign economic development through training and technical assistance. The work is divided into three financial projects--farm economics research, marketing economics research, and domestic and foreign economic analysis--plus a fund covering the reimbursable work performed by ERS for the Agency for International Development and other assistance agencies. Current activities and selected examples of recent progress are shown on the basis of these three projects and a special fund for foreign development.

FARM ECONOMICS

Current Activities: Farm economics research deals with economic problems of agricultural production and resource development. Work is concerned with the economics of organization and management of farms; extent and use of land and water resources; watershed and river basin development; capital and labor use in agriculture; production and conservation practices; adjustments in production and resource use; economic development of rural areas; and farm credit, insurance, and taxation.

Rapid technological change in agriculture and imbalances between farm production and demands for products continue to require economic adjustments in our farm economy. Farms are decreasing in number and increasing in size and degree of specialization. Farmers continue to substitute capital, machinery, chemicals, and other inputs for land and labor. These trends, along with the need to improve the economy of rural areas and raise the level of living of rural people, and the growing awareness of the need to improve or avoid further degradation of our environment, call for the most rigorous research in the field of farm economics.

Research performed under this project is divided into three major activities: farm production economics, natural resource economics, and economic development.

Selected Examples of Recent Progress:

A. Farm Production Economics Research

1. Economic Impact of Restricting or Banning Agricultural Production

Inputs and Practices: Farmers use large quantities of pesticides and other chemicals to increase production and improve the quality of farm products. Some of these chemicals find their way into our streams and lakes, and even into our food. Also, livestock farmers are facing a major problem in finding ways to dispose of animal wastes which will not contribute to the pollution of our environment.

- a. Pesticides: Estimated costs to farmers of discontinuing the use of aldrin and dieldrin could be as high as \$48 million--partly due to cost of alternative pesticide measures, and partly due to production losses. About \$30 million of the added costs would apply to corn production. These were the findings of a study of changes in farming methods for the purpose of protecting the environment. It was made at the request of the Environmental Protection Agency (EPA).

Two other reports prepared at EPA's request showed that in 1971 farmers would have spent an extra \$2 million if chlordane had not been available, and an equal added amount if use of heptachlor had been banned. Both chlordane and heptachlor are used primarily to control soil insects in corn.

In a related study of the use of 2,4,5-T in rice production, it was found that suspending the use of this herbicide in 1971 would have reduced rice growers' net income about \$4.5 million. Both yields and quality of rice would have been lowered. Rice growers in Arkansas, Mississippi, and Louisiana would have been most affected.

- b. Animal Waste: A study of the economic implications of water pollution abatement in family farm livestock production concluded that investments in livestock waste management systems on family farms could range from negligible to half or more of the total initial costs of a modern confinement system. Such investments would bear most heavily on Illinois farms where hogs provide much of the income under traditional methods of confinement production. Investment for drainage control and waste storage could cost \$15,000 to \$20,000 for a 500-head, open-lot operation. Added annual costs could range to \$6 per head and severely reduce net income. Two-thirds of total hog production in Illinois comes from enterprises of this general size. On the other hand, the thousands of typical Illinois crop-livestock farmers who annually produce a few hogs on pasture would be little affected by pollution abatement requirements. The study was made in response to a request for ERS to testify before the President's Water Quality Advisory Board on January 24, 1972.

In another study the refeeding of aerobically digested hog wastes showed economic potential on slotted floor confinement units of considerable size. However, if producers could minimize odors through other techniques, it would be difficult to justify the operation of aerobic systems in order to capture the feed nutrients from the system.

2. Capitalization of Farm Program Benefits into Land Values: At the request of OMB, ERS studied the extent to which price and income effects of farm programs have been capitalized into land values, and the extent to which landowners have paid for the capitalized values of program payments in land purchases. The study estimated that the capitalized value of the \$6.9 billion farm program benefits in 1970 was \$16.7 billion, 7.9 percent of the value of farm real estate in 1970. Findings suggest that only a third to a half of the income benefits accrue to land with the remainder going to labor and management.
3. Structure and Performance of the Farm Production Sector: Results of ERS research indicate that the farm production sector is continuing to change to fewer and larger farms, to increased use of capital and decreased use of labor, and to more specialization in commodities produced. Measures of changes in the characteristics of the sector, and knowledge of the underlying reasons for many of these changes, provides information used by public policymakers who are concerned with the economic well-being of the sector and the welfare of the people in the sector. Knowledge of the changing characteristics of the sector helps to identify emerging economic problems and to suggest needed changes in public policy.
 - a. Control of Agriculture: Control over the production of farm commodities is of concern to farmers, farm organizations, USDA, and the Congress. In response to this concern new estimates were made of the proportions of total farm output produced under contractual arrangements and by vertically integrated firms. During the 1960's, contract production is estimated to have increased from 15 to 17 percent of total farm output and vertical integration from 4 to 5 percent. Although this is not a significant change in control over the total production of the sector, there was relatively more change in livestock products, especially fed cattle, eggs, and turkeys.

The study concluded that there is little reason to expect a rapid rush into these forms of control over production.

- b. Impact of Tax Laws on Agriculture: A study of Federal tax laws which provide incentives for nonfarmers with large amounts of taxable income to look for investments in farming was made during the year. Livestock management companies have emerged to provide a channel for nonfarmers in high income tax brackets to make investments in beef breeding herds that will provide them with tax benefits. Results of the study showed that high bracket income taxpayers would not be able to achieve after-tax profits from this type of investment if certain provisions of the tax law were removed. This work helps policymakers to determine if Federal tax laws are placing family farmers and ranchers at a disadvantage in competing for production resources. The results are also used by Internal Revenue Service.
- c. Net Worth of Farm Families: Farming has long been recognized as having more than its share of low income people. However, it is also true that the average net worth of farm families is about twice that of all families. ERS research combining income and wealth into a measure of economic well-being shows that farm people are much closer to nonfarm people than income measures alone indicate. The distribution of economic well-being among farm people was also more even than the distribution of money incomes alone. Farm families narrowed the income gap during the 1960's. A primary reason was the increase in nonfarm income, especially for work off the farm.
- d. Balance Sheet of the Farming Sector: This is the only aggregate measure of changing financial characteristics of the farm sector prepared on an annual basis. Preliminary estimates for January 1, 1972, show the total value of assets in the sector to be \$335 billion, total debt at \$65 billion and proprietors' equities at \$270 billion. About two-thirds of the total value of assets is accounted for by real estate, while about one-half of the total debt is for farm mortgages secured by real estate and the other half for nonreal estate debt borrowed for production expenses and purchase of livestock, machinery, and equipment. The total amount of debt is still slightly less than 20 percent of the total value of assets in the sector.
5. Cost of Producing Cotton: ERS continues to provide up-to-date comprehensive information on the cost of producing cotton. Current year cost estimates were provided for use by the Commodity Credit Corporation in documentation of price support activities. Data on cotton production costs are also used by the National Cotton Council in its ongoing analysis of the industry, and as a basis for appraising the competitive position of U.S. producers in world markets.

Interdisciplinary research was continued in Mississippi on the effects of alternative production systems and practices on costs of cotton production. A new seedbed preparation method was tested and subsequently recommended by the Mississippi Extension Service. Other practices being evaluated include narrow row spacing, methods of weed and insect control that could reduce the amount and cost of pesticides used in cotton production, and new harvesting equipment. A substantial part of this research is carried out in cooperation with local farmers. The results will be reported for use by cotton producers.
6. Finding More Beef: There is broad public concern about prices for beef, beef supplies, and the ability of U.S. producers to provide consumers with beef at reasonable prices. In response to this concern, ERS is devoting a significant amount of resources to studies evaluating the potential for increased production of beef cattle. A preliminary conclusion is that future increases in beef are expected to come through increasing the amount of resources devoted to beef and improved productivity of the resources used in production. A large part of anticipated increases in beef cow inventories are likely to occur in relatively small herds on mixed crop-livestock farms. The East is expected to gain in relative importance in terms of beef production.

Increases in beef output in the recent past have been obtained by using resources released by declining dairy cow numbers, and grain feeding of increased percentages of calves. But little further increase is possible from these channels.

7. Teletype Auction for Fed Cattle Would Boost Efficiency: An ERS study conducted in Nebraska found the teletype auction far superior to other methods of marketing fed cattle in terms of efficiency and equity to sellers. If cattle had been sold by teletype auction in the 1969 marketing year, producers and packers might have saved an estimated \$800 million through physical efficiency, pricing accuracy, and producer bargaining strength.

The teletype auction allows all buyers and sellers to keep informed on the current price at which sales are being made and permits buyers to bid on all stock offered for sale. This feature is felt to be a major advantage for medium and small cattle feedlots whose bargaining position is not as strong as that of larger producers. The study suggests that the teletype auction may be the most significant efficiency step for producers or packers. The teletype method is widely used in Canada for hogs. The applicability of this method for U.S. hog markets is being evaluated.

B. Natural Resource Economics Research

1. Land Use: ERS continues to carry out research on issues closely related to the objectives of national land use policy legislation introduced in Congress and of the Rural Development Act of 1972. While the proposed legislation involves planning and development programs by State and local agencies, several State and local level land use planning issues require consideration within a national framework. Land use issues that transcend State lines include question of population redistribution, national food and fiber needs, recreation needs, and water pollution by chemicals, siltation and animal wastes.
 - a. Land Use Inventory: ERS has continued the development of the inventory by State of major land uses in the United States. Besides providing a nationally consistent definition and classification of land use by States, these estimates are benchmarks for projecting regional land resource use needs in the future.
 - b. Changes in Land Use: While urbanization takes 750,000 acres of rural land (more than half of it cropland) each year, cropland reclamation and abandonment in other areas is on a much larger scale. In an area extending from eastern Texas to Maine, more than 2 million acres of cropland is abandoned each year. Most of this cropland has reverted to grass and trees and hence has important ecological implications. In the rest of the U.S., however, more than a million acres a year of forest and grass land is being converted to cropland.
 - c. Use of Wetlands for Agriculture: Non-Federal land with a wetness problem amounts to about 265 million acres, or about a tenth of our land area. Nearly 100 million acres of this land is already used for crops. Another 100 million acres could be reclaimed for agriculture, although much of this land has a low potential for cultivation or is located in northern States with a short growing season. In the 304 shoreline counties, about 1 million acres have some potential for cropland but the development costs would be prohibitive.
2. Planning and Evaluation of Resource Use and Development: Interest in natural resources policy continues to grow, with more attention given to planning use and development of natural resources. Increasingly, natural resources planning efforts merge on critical issues, as when the environmental impacts of technology are to be assessed, or in seeking to identify optimum resource uses. Formulation of multi-objective plans and interest in "alternative futures projections" requires the consideration of a wide range of resources, management

techniques, financing arrangements, and socio-economic groups affected by management and development alternatives.

- a. Projections of Resource Needs for Agriculture: During the year, ERS completed projections of agricultural production, resource use, employment and income. This study of long-term agricultural production potential is carried out in cooperation with the Bureau of Economic Analysis, U.S. Department of Commerce. ERS prepared projections for the Water Resources Council and for USDA use in analyzing national, regional, and State potentials for developing water and related land resources. Projections for 1980, 2000, and 2020 were developed for the Nation, States, the 20 water resource regions, and for the 205 sub-areas in individual States. National and State projections include crop and livestock production, as well as land use; regional and sub-area projections are limited to commodity production.
- b. River Basin Studies: ERS is participating in more than 50 regional and State comprehensive river basin studies in cooperation with the Soil Conservation Service, Forest Service, other Federal Departments, and State water planning agencies. The studies are carried out under the general guidance of the Water Resources Council. Studies are used in preparing comprehensive river basin plans. The river basin reports project future economic activity in agricultural and related sectors, future demand, supply, and use of natural resources; analyze agricultural and rural water problems; assess agricultural and rural needs for natural resource developments; and appraise the economic effects and consequences of development alternatives. ERS also is participating in the 11-State Western U.S. Water Plan Study, which is being conducted under the general leadership of the Bureau of Reclamation, Department of Interior.
- c. Improving Planning Techniques: ERS continues to be closely involved in efforts to develop improved concepts and techniques for planning. New standards for planning water and related land resources proposed by the Water Resources Council will require that multiple objectives be considered in the future in water resource planning. A preliminary report has been prepared on procedures for ERS analysis in river basin planning under the new standards. The report gives the conceptual basis, procedures, and analytic techniques for measuring how a proposed water development plan will affect national and regional income, the environment, and the distribution of expected benefits to different income groups.
- d. Historical Review of Water Laws and Water Development Effort: The first volume of a study of Western water rights laws published during the year includes a comparative analysis of 19 Western States' water laws, court decisions, and administrative regulations, practices and policies. This report is expected to be a major reference for Federal and State water agencies and for attorneys and judges dealing with court cases.

Another study, focusing on Federal water policy, presents a concise history of Federal water resource programs from 1800 to 1960 to provide legislators, administrators, and planners with insights and an overview of the evolution of Federal water programs. Significant water resources legislation is discussed and a review of Federal water programs is presented.

- e. Impact of Water Resource Investments on Rural Communities: Economic analyses of the effects of water resource development have indicated that water resource investment alone often has little measurable effect on a local economy. Investments in addition to those for water resource development are required to significantly affect the rate of local economic development.
3. Environmental Quality: ERS studies of the impact on specific agricultural production and processing industries of environmental laws and regulations are discussed under Farm Production Economics Research and Marketing Economics Research. In addition to these specific impact studies on agriculture, ERS has

undertaken research on some of the more basic problems associated with efforts to improve the quality of the environment and some of the specific pollution problems of non-agricultural origin confronting rural communities.

- a. Solid Waste Management: ERS is searching for better ways to manage solid waste. One study, in North Carolina, includes an inventory and analysis of landfill plans and operation standards, location restrictions, enforcement policies, and costs. Another study is being done in the North Central States to determine what legal and administrative powers are available to local governments to guide site selection and operation of sanitary landfills. The study includes a survey of public attitudes toward sanitary landfills in the region which is intended to provide information for public officials charged with location and operating landfills.

How to manage solid waste is of increasing concern by State and county government. Limitations on burning and ocean disposal intensify the need to dispose of solid waste on land in a way that protects environmental quality.

- b. Sediment Control: Several studies of means and costs of sediment control are underway, including analysis of feasible cost-sharing arrangements that may be used to induce farmers to adopt conservation practices with public environmental benefits. Soil conservation has taken on renewed importance because of the identification of sediment as a pollution source and as a carrier of other water pollutants.
- c. Institutional Consideration: An important dimension of ERS environmental quality studies--as well as studies of land use and resource planning--is the institutional framework for resource use and decisionmaking. One such study is analyzing the common law concept of "waste" as it has operated to protect private property owners, for possible application to public conservation and environmental protection issues. Economic and legal information are jointly being used in a study to compare the effectiveness of cost sharing and income tax provisions as incentives. Another study is evaluating the relative efficiency of alternative incentives to farmers and landowners for adopting conservation practices. These and other studies are intended to help legislators, program analysts, and agency administrators understand what rights or laws exist, what benefits and burdens are attendant to the rights, and how current or prospective right holders will be affected by program or policy changes aimed at improving the quality of the environment.

C. Economic Development Research:

1. Nonmetropolitan Population Trends: The nonmetropolitan nonfarm population has grown faster than the total U.S. population since 1960--19.3 percent compared with 13.3 percent. This trend has been fostered by a higher rate of nonagricultural employment growth, especially in manufacturing, by nonmetropolitan areas and the relatively high fertility rates of blacks in the Southeast Coastal Plain and whites in Southern Appalachia. The findings were made in a study conducted by ERS for the Commission on Population Growth and the American Future.
2. Recent Population Trends in the South: Net migration of whites from nonmetropolitan areas of the South slowed markedly during the 1960's while black out-migration persisted, according to a study recently completed for the Office of Economic Opportunity. The study shows substantial increase in nonagricultural jobs in the South, but it also indicates that population and economic trends vary considerably from one part of the South to another.

Poorly educated migrants from the South are no more likely to return to the South than are the better educated migrants. However, the incidence of poverty level incomes among those who returned was substantially higher than it was among those of similar age and education who remained away.

3. Employment Gains and Rural Development: From 1959 to 1969, nonagricultural wage and salary jobs covered by Social Security increased 39 percent in non-metropolitan areas compared with 34 percent in metropolitan areas. The job growth rates have been high in completely rural counties as well as those with urban places up to 50,000 people. The most notable expansion has been in manufacturing and construction jobs in the South. Nonmetropolitan areas provided 42 percent of manufacturing jobs in the South in 1960 but gained 753,000, or over half the total for the region by 1970. They employed only 25 percent of the construction workers in 1960, but accounted for 33 percent of the construction employment gains from 1960 to 1970. Despite these gains, jobs are not being created fast enough in rural areas to bring about a balance between rural and urban population, income, and employment. To provide such a balance, nearly 9 million more jobs than can be expected from current trends will be needed in rural areas in the next three decades. Of these, 5 million are needed to create jobs for those who would otherwise remain unemployed in rural areas and 4 million are needed for rural residents who would otherwise migrate to jobs in urban areas.
4. Federal Outlays for Human Resources Programs: Rural Americans do not share proportionately in programs funded by the Federal Government. This was the conclusion of an ERS study conducted at the request of the U.S. Senate Committee on Government Operations. The study was prepared in connection with the Committee hearings on S. 10, a bill to revitalize rural and other economically distressed areas.

The study indicated that Federal spending on human resources development in fiscal year 1970--programs such as education, health, welfare, vocational rehabilitation, manpower training, and development--disproportionately favors metropolitan counties over nonmetropolitan counties. In areas where there have been pronounced population declines, per capita outlays are three to four times greater for health services, welfare payments, and manpower training and development in metropolitan counties than in nonmetropolitan ones. Nonmetropolitan counties account for half of all children ages 6-17 in poverty level families, but receive only a fifth of all Federal child welfare service funds, a fourth of Federal aid to families with dependent children, and a fourth of Federal headstart and follow-through assistance.

5. Farm Employment: The decline in farm operator and family and hired farmworker employment during the 1960's was about equal to all the jobs in a city of 8.4 million people, or the combined cities of Denver, Kansas City, Miami, Pittsburgh, and St. Louis in 1970. The number is also roughly equivalent to 70 percent of the 5 million unemployed persons in 1972. For the most part, those being displaced from agricultural employment are hired farmworkers and small farmers with grade school levels of education compared with an average of 12.2 years of education for the total labor force with which they must compete for nonfarm jobs.

These findings came from the continuing ERS research on rural manpower which provides policymakers, program managers, and concerned groups with comprehensive information on the rural labor force, especially farm and migrant labor.

The self-employed in agriculture in 1971 consisted of about 3.3 million farm operators and working members of their families, about half of whom do a significant amount of nonfarm waged work each year. During the 1960's, the average number of farm operators and working members of their families employed on farms declined by about 1.9 million, and the number of persons (except foreign nationals) doing some hired work on the Nation's farms dropped by about 1.2 million to 2.5 million. The number of foreign nationals entering the United States for temporary employment in agriculture declined from 334,729 in 1960 to only 17,474 in 1970.

6. Rural Housing: A recent study of housing in areas eligible for Farmers Home Administration (FHA) programs suggests that national housing goals need to continue to emphasize improving housing in rural areas, particularly in the South and among minority households. Based on data in the 1970 Census of

Housing, the study found that 68 percent, 2.6 million, of the U.S. units lacking complete plumbing (the best available single measure of substandard housing) were in FHA areas, compared with 65 percent in 1960. In 1970, nearly two-thirds of the units lacking complete plumbing in FHA areas were in the South and blacks occupied two-fifths of them. Crowding in FHA area housing was found to be more prevalent than in more urban areas, contrary to the popular belief that crowding is mainly an urban problem. The study found a third of all occupied units were located in FHA areas. The number of occupied units in these areas grew from 18.8 million in 1960 to 20.4 million in 1970.

7. Financing of Water and Sewer Facilities: Research conducted for Farmers Home Administration shows that increasingly, local governments have been forced to rely on Federal assistance in financing water and sewer projects. Analysis of a number of options indicates that the least expensive way for the Federal Government to meet the need for rural community water and sewer facilities would be through direct loans at the market rate of interest. Grants and interest-free loans are most advantageous for local government. The impact of the various financing plans on user fees was examined in the study. Further analysis is underway on the impact of new facilities on population, assessed valuation, and business activity in the investing communities as well as a system to provide improved management data for Farmers Home Administration on costs and financing of water and sewer projects.

8. Taxation and Local Government Finance: Frequent inquiries on taxation and assessment problems, including those from the Advisory Commission on Intergovernmental Relations and the Congressional Research Service, underscored the importance of continued ERS research in this area. Work was conducted on the future role of and alternatives to the property tax. Problems of differential assessment of rural-urban fringe land also continue to be a research focus.

ERS's current statistical series show farm real estate tax levies rose 6.4 percent to \$2.8 billion in 1971, continuing an uninterrupted trend since 1942. Taxes levied were higher in 1971 in all States, except Alaska, Iowa, Louisiana, Minnesota and West Virginia. Ten States had increases of more than 10 percent with the greatest increase in Washington (18 percent) and Michigan (15 percent).

9. Adjustments in the Tobacco Industry: Forces operating within the tobacco industry are producing dramatic and painful adjustments, not only within the industry, but throughout the economy of the southeast region where it is a major source of employment and income. In 1969, production and marketing of tobacco provided total revenue of \$10.9 billion. The quantity of tobacco demanded is declining, and technological improvements are threatening to sharply reduce labor and other resource requirements per unit of output.

Preliminary results of research underway to determine the impact of these adjustments suggest that mechanization of flue cured tobacco production would displace much more labor and utilize somewhat more urban labor. In rural areas such as the nine counties in the Tidewater of North Carolina, the potential net loss in jobs is expected to be four times as great as in a relatively urbanized and industrialized tobacco area such as the 11 counties around Winston-Salem and High Point. The latter area has both more nonfarm job opportunities and can provide more of the services needed by a modernized tobacco industry.

The research also seeks answers to questions such as these: What changes are taking place in the structure and organization of the tobacco industry in response to demand shifts, technological, and institutional changes, and directions of agricultural policy? What are the impacts of these changes on employment, income levels, and other aspects of economic activity in tobacco producing areas? The U.S. Department of Labor and agricultural experiment stations in some of the producing States have requested the results of this research for use in alleviating some of the emerging problems of unemployment and resource utilization. The results will also provide a basis for making public and private policy and program decision regarding this industry.

10. Rural Noncommuter Areas: According to a study of the characteristics of U.S. rural areas conducted for the Committee on Agriculture and Forestry of the U.S. Senate, 12 percent of the Nation's population live in counties beyond the effective commuting field of urban employment centers. These 24 million Americans live in areas where the pressing needs are for more adequate incomes, better housing, and more adequate

public services. The local governments in many of these areas depend increasingly on State and Federal assistance as local tax bases decline. Federal programs that invest in people are not reaching noncommuter counties in proportion to their share of the total need. This is particularly true for programs in the fields of education and training, housing, and welfare. Outlays of Federal programs in noncommuter counties are dominated by agricultural and natural resource programs which account for more than one quarter of the total.

MARKETING ECONOMICS

Current Activities: Marketing economics research assesses the consequences and benefits that flow from alternate ways of marketing the Nation's output of farm commodities.

The current program is built around understanding the forces, changes in the marketing system, and the effects of change in the economic position of all participants from farmer to consumer. Work is underway or has been completed on futures trading in farm products, food product dating, food retailing in low-income areas, the effect of synthetic and substitute products on traditional markets for farm products, and pollution problems of processing plants.

Emphasis of the research program is moving toward measuring the savings from efficiencies through optimal adjustments for entire commodity industries such as the hog-pork sector, feed grains, wheat, rice, citrus, and cotton textile products. Emphasis also is being placed on identifying marketing spreads for selected commodities, as well as specific cost components of the spreads and how they change over time.

Selected Examples of Recent Progress:

- 1.. Food Costs and Marketing Margins: Since the mid-1950's, the Congress has appropriated funds specifically designated for monitoring marketing costs, margins, and profits of food marketing firms. This research meets the continuing and often pressing demand for accurate information and analysis of salient changes from reasonable prices at the retail level, and changes in prices and margins of wholesalers and processors that do not adequately reflect supply and price conditions at the farm level.

The imposition of wage and price controls in 1971 has resulted in an unprecedented demand for current information on costs and margins for individual food items. Requests for information have come from the Price Commission, Council of Economic Advisers, food industry representatives, members of Congress, and the public. In response to these requests, more resources have been committed to this area of work.

Special margins data has been prepared for the Price Commission's use as an early warning system for signaling food pricing problems. Findings facilitated prompt and accurate evaluation by the Price Commission, Council of Economic Advisers, and Department officials of many questions and charges associated with rising food costs, particularly beef prices.

Because of the need for tracing aberrations in the farm-retail margin to particular levels and functions in the marketing system, a research team has been committed to the development of detailed costs involved in marketing farm foods at all marketing levels at the earliest possible date.

2. Structure of Food Marketing Industries: Greater concentration was found in nearly every line of the food marketing business in a comprehensive assessment of recent changes in the structure of food marketing industries. The study contributed background information needed in assessing the impact of integrated organizations on the control of agriculture.

During the period 1958-1967, the total number of food marketing establishments fell about 9 percent, mainly due to a 16 percent decline in numbers of grocery stores and a 24 percent drop in food processing plants. Average grocery store sales doubled. In 1967, supermarkets, constituting 15 percent of grocery stores, accounted for about 75 percent of total grocery store sales. In food processing,

the largest 4 firms in 9 of 30 industries accounted for over half of total value of shipments in their respective industries during 1967. These relationships changed little from the previous 5 years (1962).

3. Economic Impact of Pollution Control Standards on Agricultural Processing Industries: EPA's Office of Planning and Evaluation requested short-term impact studies of the dairy and cane sugar industries. These studies will supply EPA with analytical frameworks for determining the economic impact of pollution control requirements and assessing the expected impact of proposed water pollution standards on these industries. The analytical framework includes: (1) cost estimates for pollution control for various size plants in each industry; (2) evaluation of the effect of controls on the financial structure of these industries; (3) the probable change in size of plants; (4) expected impact on prices; and (5) community impacts.
 - a. Fruit and Vegetable Processing: The fruit and vegetable processing industries, users of vast volumes of water, are likely to be hardest hit by the water pollution control standards. For example, preliminary estimates indicate that the total costs of treating tomato processing waste in 1971 was \$7 million or approximately \$1.31 per ton of raw tomatoes processed. Major tomato processing States are California, Ohio, and New Jersey.

Work is now getting underway on a comparison of changes in control regulations and the likely impact on processing costs. This will serve as a pilot study for research in other fruit and vegetable processing operations. Results will be used by EPA for program planning and by industry for guidelines as to the nature of economic adjustments caused by water control standards.
 - b. Poultry Processing: Poultry processing plants without municipal treatment would need to invest \$21-\$60 million to acquire the best technology currently available to reduce waste water pollution, according to a study made for EPA. This outlay would represent 1 1/2-6 percent of the average cost of a new poultry plant, adding 8.2 to 22.6 cents per hundred pounds of liveweight slaughter.
4. Fertilizer Supply System: A continuing general concern with rising costs of farm inputs led to a study of possibilities of introducing a more efficient fertilizer supply system. This study used Michigan agriculture as the laboratory for measuring the savings from either complete or partial adoption of the most efficient forms of nitrogen, potash, and phosphate nutrients. The savings, conceivably as much as a third of the present cost of fertilizer to farmers, would come from both processing and distribution economies. Also, the study evaluated the impact of pollution abatement regulations, such as compulsory scrubbing of smoke stacks.

The fertilizer industry is finding the results extremely useful in reviewing their investment plans. The Department plans to do further research of this type for other areas of Midwestern agriculture and other types of inputs.
5. Livestock Trucking: A study of the costs of trucking livestock was undertaken in 1972. The American National Cattlemen's Association (ANCA), the National Livestock Dealers Association, and the Livestock Carriers Division of the American Trucking Associations formally requested a study of the economics of livestock transportation. The results are being used by livestock shippers and truckers in establishing and evaluating rates offered by for-hire carriers under various conditions. The results will also be useful as input into further research requested by ANCA, to evaluate the rate-making performance of for-hire truckers and to assess competitive interrelationships in livestock trucking activities of both shippers and for-hire truckers. Planning of this research is underway.

6. Farm-to-Mill Movement of Cotton: The cotton ginning and warehousing industries are characterized by excess capacity. Handling practices between the farm and textile mill are being questioned as costs of moving cotton continue to rise. ERS is engaged in a series of studies designed to determine the cost-reducing potential of alternative gin-warehouse structures and cotton handling systems. Producers and textile mill firms have encouraged these studies through Cotton, Inc. and the National Cotton Council. The research builds on past research of ginning and warehousing costs and is being designed to complement current and planned research on textile milling.
7. Export Markets for Citrus: A recent study completed for the Foreign Agricultural Service clearly emphasizes the need for new and expanded markets for citrus products. Indications are that the domestic market cannot be expanded rapidly enough to absorb the projected 1980 orange production of 13 million tons. In order to maintain on-tree prices at the 1961-70 level, there is a need to develop new markets capable of handling 4.5 million tons of oranges by 1975 and 7 million tons by 1980.

In contrast to oranges, present grapefruit markets appear capable of absorbing most of the projected increase in production over the next 10 years. To maintain prices comparable with 1961-70 levels, only 17.5 percent of the projected 1975 production and 23.5 percent of projected 1980 production would have to be sold outside of traditional domestic markets. These findings will provide a basis for making policy and program decisions regarding expansion of foreign markets and the orderly marketing of domestic supplies of citrus.
8. Grain Pricing and Storage in the Southeast: The Southeast is a grain deficit area, yet it is a leader in poultry production and is an increasingly important producer of livestock. Readily available supplies of grains at competitive prices are critical to this important and expanding agricultural sector. Projections show that output of both crop and livestock will continue to increase in the Southeast, but increases in grain production will not keep pace with growing demand. A part of the grain marketing research program is determining the advisability of constructing additional storage and drying facilities in the area, taking into account seasonal trends in spot prices of grain in local and surplus markets and the relationship these prices have to future prices. Hedging rules applicable to Southeastern grain handlers are being developed. In addition to reducing price risks for livestock and poultry feeders and grain handlers, hedging can be a means of earning a return on storage space.
9. Market for Farm-Raised Catfish: At the request of the catfish industry, a consumer-oriented study was undertaken to determine the demand and price relationships for farm-raised catfish. A controlled pricing experiment in six super-markets in Atlanta, Georgia, has been completed. Preliminary findings indicate that a substantial volume of catfish will move at price levels high enough to be profitable to all segments of the industry. While the long-term benefits of this research to the industry will be to promote orderly marketing, the results should be of immediate help to the industry in designing a promotional program to capitalize on the apparent unrealized demand for catfish.

DOMESTIC AND FOREIGN ECONOMIC ANALYSIS

Current Activities: This project consists of two major activities. Domestic economic and statistical analysis covers the compilation, analysis and interpretation of American agriculture. The first objective of the work is to keep farmers and others concerned with agriculture fully informed on both the present and prospective agricultural situation. This economic intelligence is provided through regular reports and special analyses for specified commodities and geographic areas.

The second major activity, foreign economic and statistical analysis, is concerned with compilation and analysis of trade statistics, studies of economic and monetary factors affecting agricultural trade and the relationship between foreign economic development and trade. Foreign economic and statistical analysis is concerned with estimation of

international import requirements and export availabilities and evaluation of effects on U.S. exports; estimation of the impact of foreign countries' policies on trade in agricultural products; and provision of information on trade, prices, production, utilization, and international finance for appraisals of trade opportunities, trade negotiations, and various export and import programs of the U.S. Research emphasizes economic implications of conditions in world and regional markets including policies and programs of foreign countries on our trade in farm products and the efficient use of our excess food production and other resources in economic development abroad. Knowledge of long-range supply and demand trends and import requirements in foreign countries and the location of new opportunities for U.S. farm exports is essential if the United States is to expand farm exports. The information flowing from this research is employed in the formulation of national policies and programs in the areas of foreign agricultural trade, foreign agricultural marketing, and foreign economic development.

Selected Examples of Recent Progress

A. Domestic Economic and Statistical Analysis:

1. Farm Income: In 1972, farmers realized an unprecedented net income level of nearly \$19 billion. Realized gross farm income soared \$5 3/4 billion over 1971 to almost \$66 billion, farm production expenses moved up about \$3 billion to \$47 billion, and Government payments increased by almost \$1 billion. Thus, net income realized by farm operators rose about \$2 3/4 billion above the \$16.1 billion for 1971.

Estimates on 1971 showed that farm numbers declined by 48,000, about half the yearly rate of decline of the late 1960's. The number of farms with gross sales of less than \$20,000 decreased by 72,000 in 1971. California, Iowa, and Texas were the top States for cash receipts from farming in 1971, with sales of \$4.9 billion, \$4.0 billion, and \$3.3 billion, respectively. Many States are becoming users of the ERS State estimates of farm income for their own fiscal and program administration purposes.

Preparations are underway to revise and improve farm income estimates and their distribution by farm size. Improved and refined farm income data are needed by policymakers in making sounder agricultural program and policy decisions. New benchmark information from the Census of Agriculture and a USDA Survey of Farmer Expenditures will serve as a basis for the improved estimates. Revised estimates will better reflect recent changes in the structure of the farming industry, including the sale of new products and other income as well as additional production expenses.

2. Supply, Demand, and Price Analysis: A principal output of this program of research deals with continued appraisal of the current supply, demand, and price situation for individual commodities and the income position of farmers. The results of this work were published in some 60 situation reports under 14 separate titles. Another principal outlet for the results of this work is the annual National Agricultural Outlook Conference and four regional outlook meetings. Farmers, processors, and distributors need continuing economic intelligence regarding supply, demand and price prospects to aid them in making sound production and marketing decisions. Policy officials need this economic intelligence to help assure adequate, well-balanced supplies of food and fiber at equitable returns to farmers. The following seven commodity areas are currently under close scrutiny by both the public and the agricultural sector. These are the latest ERS appraisals of the current status and short-term prospects in these areas.
 - a. Food Grains: Wheat supplies for 1972/73 totaled 2.4 billion bushels, 2 percent above a year ago and the third largest on record. Wheat feeding is expected to continue relatively heavy while exports, estimated at 1.1 billion bushels, will surpass the old record by almost a third, largely on the strength of huge shipments to the USSR. Total disappearance is expected to reach a record 1.9 billion bushels, resulting in a sharp drawdown in

stocks to around 485 million bushels by the summer of 1973. With demand at an unprecedented level, prices are expected to average 40 to 45 cents over loan for the 1972-1973 crop year.

Rice supplies for 1972/73, at 98.0 million hundredweight, slipped 6 percent, reflecting sharply lower August carrying stocks. Export demand has continued strong and disappearance will again exceed the crop, resulting in another year of stock reduction. Farm prices may average 20 percent over last year's \$5.24 per cwt., reflecting the strong demand and tight world supplies.

- b. Feed Grains: Farmers planted 13 million fewer acres to feed grains in 1972, but with a large carryover the 1972/73 feed grain supply will total close to last year's level. Domestic use is increasing in response to expanded livestock numbers and favorable livestock-feed price ratios. Exports could increase as much as 15 percent above the 27 million tons of 1971/72. Total disappearance is expected to exceed production, bringing a moderate drop in carryover next summer.

Feed grain prices received by farmers during 1972/73 will average higher than in 1971/72. Oat and barley prices were strong during the summer, and corn and sorghum prices, bolstered by harvest delays, have been considerably above the low levels of 1971.

- c. Soybeans: Based on the November 1 crop estimate, soybean supplies in 1972/73 total 1,423 million bushels, 12 percent above 1971/72 but below the record 1,450 million of 1969/70.

Despite record harvest time prices, soybean demand is so strong that the entire crop is expected to be utilized. However, unlike recent years, there is no reserve of old crop beans to draw from. As a result, the carryover next September 1 will again be at low operating levels, somewhere near this year's 72 million bushels.

Increased usage is expected in both domestic crushings and exports--with the latter sector expected to expand sharply. Soybean crushings are forecast at 765 million bushels, well above last season's 721 million and the record 760 million in 1970/71. Strong soybean meal demand is a major factor boosting crushings; however the weakened soybean oil market is a limiting factor. Larger cottonseed oil supplies--at lower prices--also are tending to dampen crushing demand. Exports may exceed 500 million bushels, approximately 100 million more than the 416 million shipped last year and sharply above the record 434 million in 1970/71. The expanding world demand for protein feedstuffs, coupled with short fish and peanut meal supplies, are primary reasons behind the favorable export outlook.

The season average price received by farmers for 1972-crop soybeans is expected to average \$1 or more above the CCC support rate of \$2.25 per bushel and well above the \$3.01 of last season. The alltime high is the \$3.33 received in 1947/48. A small carryover last September, continuing strong demand, and a delayed harvest due to wet weather are primary factors behind the high price level.

- d. Meat Animals and Poultry: Red meat output in 1972 fell a little short of output in 1971. Pork output was off sharply, lamb and mutton production was moderately smaller, but beef production was up somewhat. Poultry output was up substantially, but egg production was down slightly from a year earlier.

Prices received by farmers for livestock were substantially higher in 1972. The farm price of cattle was up more than \$4 per 100 pounds, hog prices jumped nearly \$8 and lamb prices were \$3 higher. Broiler and turkey prices averaged slightly higher, although egg prices generally were below 1971 levels.

Red meat and poultry output likely will rise in 1973. A moderate increase is expected in beef production and pork output will be up, reflecting the upswing in pig production that began in late 1972. Another small increase in broiler and turkey output is likely, but egg supplies probably will be below a year earlier.

- e. Dairy: In 1972, dairy consumption broke through its persistent decline since 1954 with an increase to 562 pounds per person from 558 pounds in 1971. The year was marked by 11 percent gains in sales of cheese and low-fat milk, more moderate sales increases for frozen products, butter, and cream, and a slight increase in whole milk sales for the first time since 1965.

Cash receipts to farmers from the sale of milk and cream exceeded \$7 billion for the first time, up from \$6.8 billion in 1971 and \$5 billion in 1965. Dairy farmers received an average \$6.08 per 100 pounds of milk, up from \$5.87 in 1971 and up 43 percent since 1965.

- f. Cotton: The 1972/73 U.S. cotton situation is dominated by a 1972 crop of 13.4 million bales which has boosted supplies almost 2.1 million above last season despite the smallest carryover stocks in two decades. Disappearance may increase because of stronger export prospects and stocks next summer will rise to a more normal level of around 5.1 million bales.
- g. Food Prices and Consumption: Retail prices of food averaged 4.2 percent higher in 1972, compared with a 3-percent increase in 1971. The 1972 price rise reflected strong consumer demand and smaller supplies for several commodities. Farm prices accounted for a large part of the gain; farm-retail spreads climbed less than 2 percent.

Among individual commodities, beef and veal prices were 9 1/2 percent higher than in 1971, pork was up 15 percent, fish was 8 percent higher, and fresh vegetables jumped 7 1/2 percent; egg prices were fractionally lower.

Consumer expenditures for food totaled \$124 billion in 1972, over 5 1/2 percent more than in 1971. Despite the increase, income climbed even faster and the share of the Nation's disposable income going for food declined again -- 15.6 percent in 1972 compared with 15.8 percent in 1971.

Per capita consumption of food declined fractionally in 1972, largely because of 7 percent smaller consumption of pork. Per capita uses of eggs, fresh and processed fruit, and fresh vegetables showed smaller declines. Consumers used substantially more beef, poultry and fish. The per capita consumption of dairy products inched up in 1972 for the first time in several years.

3. Special Studies Conducted In Areas of National Interest: An ERS study showed a dramatic increase in use of wheat as livestock feed in recent years. Although there are marketing problems, the potential for increased wheat feeding is substantial provided prices remain competitive with feed grains.

In connection with a Department-wide project, a study was made of the economic problems faced by the potato industry and recommendations were made to improve conditions. Overproduction in recent years has renewed interest in several approaches to supply management. Much newly reclaimed land, especially in the West, has been planted to potatoes in recent years, aggravating industry price problems. Growers contacted indicated that they are not in a position to bargain with processors on equal terms. The study predicts that three-fourths of food-use potatoes will go for processing by 1980, up from 50 percent in 1970. Because of this trend, growers emphasized the importance of allowing bargaining groups to meet with processors without fear of economic retaliation.

A major historical review of the quarantine of imported plants and animals was completed at the request of the Agricultural Research Service. The study was requested for the use of a task force assigned the job of evaluating the protection provided by quarantine regulations, adequacy of legislation, and the improvement of detection capability. The historical review shows that although the problem of excluding plant and animal diseases and pests is not new, it has become vastly more complicated as transportation facilities have increased.

An analysis of purchases of surplus agricultural commodities for distribution to the school lunch program and to families was conducted during 1972 at the request of the Agricultural Marketing Service. This program is provided for by Section 32 of the Agricultural Adjustment Act. The impact of various combinations of USDA commodity purchases on prices and returns were examined since the basic intent of the program was to make purchases that would result in maximum benefits to growers. The analysis will aid program managers in evaluating the likely impact of various purchases on grower prices and farm income.

A statistical supply response model for corn was developed in 1972 to assess the probable impacts of alternative price support programs. Particular attention in 1972 was focused on the implications of permitting additional acreage diversion and payment rates required for this acreage. Based on the model, corn acreage predicted for 1972 was fairly close to actual plantings. This model is expected to be useful in future evaluation of program alternatives for policy-makers.

Annual U.S. retail and farm demand relationships for fed and non-fed beef and pork were derived in 1972 and incorporated into a larger analytical framework for the U.S. livestock-grain economy. These results suggest that non-fed beef and pork are competitive while fed beef is not highly competitive with pork products. The results are expected to be useful in future evaluation of alternative trade policies and U.S. domestic farm programs.

B. Foreign Economic and Statistical Analysis

1. Trends in U.S. Agricultural Exports and Imports: Considerable interest is expressed by exporters, agricultural leaders, farmers, and members of Congress in the situation and outlook for U.S. agricultural exports. This information is updated monthly in ERS's Foreign Agricultural Trade of the United States. The annual World Agricultural Situation and its five regional supplements provide current information and outlook in extensive detail on foreign farm production.

In November 1972, ERS published special supplements for each of these two publications. The supplement to the World Agricultural Situation dealt with the unusually tight and competitive world grain situation which developed in preceding months, and provided estimates of world output, world trade, and probable price effects for the year ahead. A second supplement, to the Foreign Agricultural Trade monthly, was published jointly with the Foreign Agricultural Service, and will be repeated annually. It forecast U.S. agricultural exports for the fiscal year ending June 30, 1973.

- a. U.S. Agricultural Exports, Fiscal Year 1973: For the year ending June 30, 1973, our farm exports will rise around \$2 billion above the \$8.05 billion record achieved in fiscal year 1972.

Agriculture's contribution to the U.S. trade balance will also be at an alltime high, \$3.5 billion compared with \$2.0 billion last year. This contribution helps offset the unfavorable nonfarm trade balance, which was \$7.1 billion in 1971/72.

The Soviet Union accounts for about half of the total increase forecast for U.S. agricultural exports this fiscal year. USSR purchases are now estimated at \$1.2 billion, compared with about \$150 million last year. Most of this

increase will be in wheat, which may total around \$660 million. Feed grain exports may total close to \$400 million, and soybeans \$135 million.

Exports to Western Europe are expected to total about \$3.2 billion, slightly more than a year earlier. Japan, the top single-country market for U.S. farm products, will probably take a record \$1.5 billion worth this year. Exports to other Asian countries, including the Near East, are expected to show a substantial gain and total over \$2.0 billion. Recent sales of linseed oil, wheat, and corn may bring exports to the People's Republic of China to about \$50 million.

About one-seventh of the U.S. farmer's income derives from exports of farm products. The production from 65 million acres of U.S. cropland--1 out of every 5 acres harvested--was required for the farm commodities exported in fiscal year 1972. Exports equaled from one-third to three-fifths of 1971's output of soybeans, wheat, rice, cotton, tobacco, tallow, and cattle hides.

- b. U.S. Agricultural Imports, Fiscal Year 1972: A continuing analysis is being undertaken of foreign and domestic developments affecting the magnitude and changing composition of U.S. agricultural imports. U.S. imports of agricultural products advanced 4 percent in value to reach a new high of \$6.0 billion during fiscal year 1972. The gain occurred in products competitive with domestic production, which rose 7 percent to \$3.95 billion. Higher domestic production costs, increases in U.S. disposable incomes, and expanded export programs of foreign suppliers are major factors in the gain. Increased volume accounted for nearly all of the expanded competitive imports. Purchases of cattle, meat, sugar, some fruits and vegetables, tobacco and wines increased. Noncompetitive imports declined 2 percent to \$2.09 billion as lower prices for coffee, cocoa, and natural rubber contributed to lower import values. The longshoremen's strikes hampered banana imports.
2. Impact of Changing Patterns of World Agricultural Trade: A study on patterns of world agricultural trade and U.S. agricultural exports was completed. These results showed that the changing patterns of world agricultural trade have (1) increased the developed countries' market share in all major economic regions; (2) decreased the developing nations' market share in the developed countries; (3) made the developing nations more dependent upon agricultural products of the developed countries; (4) increased the dependency of the central plan countries on world supplies of farm products; and (5) effected a substitution in world markets of developed countries' farm products for those from the developing nations.
3. International Monetary Developments: Two major developments in the international monetary field took place during the year--"New Economic Policy," which included U.S. dollar devaluation and a temporary import surcharge, and the December 1971 Smithsonian Agreement reached by members of the International Monetary Fund. Both of the events were analyzed for their effect on agricultural trade and the result of these analyses were published. In general, agricultural exports should benefit from the devaluation of the dollar although there are many non-tariff barriers that will offset some of the impact of the currency realignment. Using the value of U.S. agricultural exports in 1971 as a basis of calculating a weighted average, the price of our exports declined by 5.6 percent in terms of foreign currencies as a result of currency realignment, while the price of our agricultural imports increased by 2.6 percent. Although a new monetary system has not been constructed, an interim arrangement is in effect. The stability brought about by the Smithsonian Agreement has permitted agricultural trade to continue growing.
4. Impact of Recent Changes in the European Community: Four countries (United Kingdom, Ireland, Denmark, and Norway) applied for Community membership in 1972, although Norwegians voted later not to join. ERS has evaluated the probable production and consumption changes in the applicant countries if they join and adopt the EC's Common Agricultural policy. A study of the compound (mixed)

feed industry in the United Kingdom indicates that adoption of the EC support policy will dampen increases in consumption of compound feeds and increase the use of grain substitutes and high protein feeds relative to cereals. Another study reveals that the agricultural trade of the European Free Trade Association (EFTA) countries that are not seeking EC membership will be adversely affected by the Community's enlargement. If the EC grants agricultural concessions in special trade arrangements with these countries, U.S. agricultural exports to them as well as to the enlarged EC could be adversely affected.

To provide a framework for evaluating EC policies and possible future changes in policies, a model for each of the Community countries is being developed to provide sets of internally consistent projections of adjustments in production and consumption levels for grain, feed, and livestock products under alternative policy and price conditions.

5. International Rice Marketing: We are the world's largest exporter of rice, shipping about 60 percent of U.S. production. An international trade model, encompassing both the domestic and foreign production-marketing-demand complexes, is nearing completion. It utilizes previous research results on domestic rice drying, handling, storing, and milling costs and on distribution practices and projections of foreign supply and demand. The model will facilitate analysis of program alternatives by the Congress, CCC, and the rice industry.

As the "Green Revolution" has continued and the international rice market has become increasingly competitive, the Rice Council, Rice Millers' Foundation, and others in the rice industry have emphasized the need for such a model and have been most helpful in developing various cost and distribution components necessary for its completion.

6. Comparative Advantage and International Competition: Three studies were published evaluating the probable production potential of the grain and livestock sectors of Canada, Australia, and Argentina, by 1975. These studies present a picture of trends and changes (both past and projected) in the production and trade of three of the world's major agricultural exporters and identify the major causes of the changes. Similar studies have now been completed on the growth potential of the feed and livestock sectors of Eastern Europe the beef and dairy industries of New Zealand, and fats and oils in Mexico. The output of these and similar studies is of particular value to public and private and decisionmakers in planning export strategies and in gearing U.S. production to meet future export opportunities.

FOREIGN DEVELOPMENT ASSISTANCE

The U.S. Department of Agriculture provides technical assistance to friendly developing countries and training in various agricultural specialties to participants from these countries. In carrying out these programs, the Department must develop and maintain effective relationships with international and U.S. organizations including the Agency for International Development, Peace Corps and other U.S. financed organizations. This involves assisting in planning agricultural development policy, in formulating technical assistance projects, and in the review and evaluation of U.S. agricultural assistance efforts overseas. The Department is reimbursed by the development assistance agencies for the activities performed in support of this program.

Need for this service results from increasing demands on the Department for support of international agricultural development. The Foreign Assistance Act of 1961, as amended, directs the administrator of the Agency for International Development to utilize facilities and resources of agencies of the U.S. Government to conduct effective technical assistance programs abroad when such facilities are particularly or uniquely suitable.

Although weather conditions have recently caused some drop in per capita food production, the food picture is brighter. This is due primarily to new technological developments which have improved the ability of low-income nations to make important long-run food production gains. However, rapid population growth has offset, to some extent, the benefits of these developments. This has brought into focus the need for overall economic development. New problems must now be attacked. These include distribution of the benefits of development, use of the labor force, improving the competency of agricultural institutions and ministries, correcting nutrition deficiencies and agricultural development policies. The activities of the Department must be coordinated and mobilized to more fully assist in planning, executing and evaluating agricultural assistance programs in the developing countries. USDA personnel are assigned to duty in foreign countries by their parent agencies to carry out requests for assistance from AID and others under overall Departmental coordination.

The need for this service also stems from the Department's awareness that the well being and productive efficiency of developing nations is vital to a healthy American agriculture and world agricultural trade. Political stability and economic growth in a developing nation is closely dependent on its agricultural development.

The Economic Research Service coordinates and administers this Departmental program and maintains a central office in Washington, D.C. for this purpose.

Current Activities

The Department of agriculture has provided technical assistance to low-income nations for more than 100 years. In 1871, U.S. Commissioner of Agriculture Horace Capron led a team to Japan. The USDA technical aid program evolved from such isolated examples of assistance to the more general but uncoordinated efforts of the 1940's and 1950's. Finally, in the mid 1960's, more widespread, coordinated efforts began with emergence of a specialized agency to coordinate USDA overseas development programs. The most recent move to more fully systemize this effort involved merging these activities into the Economic Research Service, where the economics capability of the Department could be increasingly utilized. Some 16 USDA agencies cooperate with ERS by making technicians available for overseas development programs.

The specific technical assistance activities carried out by USDA include: assisting low-income countries and AID missions by assigning technicians to focus on problems and needs; training of foreign nationals; advising on international nutritional improvement; and initiating new and innovative directions in technical assistance. Last year the Departmental activities involved more than 300 man-years of assistance and the training of 1,200 sponsored foreign participants.

Selected Examples of Recent Progress:

1. Technical Assistance: Special cooperation with the Turkish Government to plan agricultural development in a former opium poppy growing area highlighted USDA's foreign assistance program this year. USDA's participation following Turkey's ban of poppy cultivation is part of a general U.S. government program to fight drug use in America. The Department recently entered into an agreement to provide the Government of Turkey assistance in carrying out programs to achieve economic development in the region where poppy cultivation was banned.

Another priority project, this one in Vietnam, was a special economic study of that Nation's agricultural industry. The study will help the Vietnamese plan agricultural progress. Department scientists continue their research in Africa for higher yielding strains of millet and sorghum while USDA economic advisors help the Ministries of Agriculture in Kenya and Liberia improve their agricultural development planning, analysis, and action programs.

Other USDA specialists in El Salvador are helping improve marketing, extension, and research programs. A nutrition advisor in India is concerned with developing foods which will improve nutrition levels there. Soil and water management teams are located in India, Thailand, and Tunisia. An advisor in Colombia worked on agrarian reform activities, including supervised credit for small farmers, while another assisted with transportation and marketing problems.

There is a trend toward more short-term consultant assignments which allows increased emphasis on solving specific problems brought to light as the basic foundation for development is built. There were 243 short-term and 177 resident positions, compared with 192 short-term and 207 resident in FY 1971.

Among the short-term problem solving assignments were:

- . Assistance to the Jordanian Government in formalizing a rehabilitation and development plan for the East Bank of the Jordan River Valley.
 - . A USDA/AID study to find ways to eliminate the estimated \$4 million a year direct crop losses caused by the Mediterranean fruit fly in Central America. Benefits from even the most costly control program recommended would exceed costs as early as the fifth year of the control program, assuming the medfly would spread to other areas if there were no eradication programs.
 - . AID-sponsored projects to improve the production and domestic marketing of food grains in Niger, Upper Volta, Mali, Senegal, and Mauritania.
 - . A three-man USDA/AID team that assessed West Pakistan's present and future prospects for processing and marketing edible oils, oilseed and oilseed by-products.
 - . Assistance with agricultural marketing in Nepal, including conducting workshops, presenting materials, and otherwise assisting with a Government-sponsored agricultural marketing conference.
 - . A USDA/AID team helping Colombia establish an agricultural estimating program and train statisticians. Since the project began in May 1969, members of the statistics teams have returned to Colombia to assist at crucial points of program development.
2. Training: USDA foreign training efforts reflect a growing sophistication of agricultural leaders in the developing nations. They are requesting more training in administration and management, agricultural policy and planning, as well as cooperatives and marketing; these are complementary to the more technical agricultural skills which still receive emphasis.

For the Turkish Government, USDA arranged and conducted two Executive Management Seminars in 1972, making a total of four such seminars conducted for 62 Turkish agriculturists since 1970. Those Turks already trained are helping improve management skills of their co-workers in special in-country training sessions.

Most sources of foreign aid, such as the World Bank and the U.S. foreign assistance program, require special studies and development plans from developing nations when financial aid is requested. USDA conducted a course for agricultural planners from 12 nations to help them learn the techniques for preparing project proposals.

There is increased emphasis on carrying out training programs in the participant's home country, thereby capitalizing on capabilities of former trainees, practical on-site problem oriented experiences, and substantially lessened costs per participant trained. USDA specialists conducted agricultural statistics training programs in both Colombia and Panama in 1972. Various livestock and extension programs were carried out recently in Botswana, Lesotho, and Swaziland.

3. Nutrition Improvement: The Department worked closely with the Agency for International Development on programs to improve the quality of diets in the developing nations.
 - . An evaluation focused on the consumer acceptability of U.S. donated blended foods, such as CSM (corn-soy-milk) and WSB (wheat-soy blend), is now being carried out by specialists in Brazil, India, and the Philippines.
 - . A survey is also underway to find ways to improve the diets of preschool children; special attention is being given to health benefits and distribution costs.
 - . Manioc is a staple starchy food in many low-income nations, including Brazil. In that country, a project has been started to fortify manioc flour with soy grits to improve its protein level.
4. Work with Other International Organizations: Last year under 1971 agreement, the Department filled seven requests for short-term assistance in volunteer training as well as requests for project evaluations. USDA reviewed Peace Corps extension work in Liberia and recommended ways Peace Corps volunteers could assist extension service programs.

Negotiations were completed between the Department and the Inter-American Development Bank, and USDA provided four technicians for short-term assignments under the new agreement.

5. Reimbursement from the Agency for International Development: The following table shows the distribution of actual reimbursements in fiscal year 1972 to the U.S. Department of Agriculture for technical agricultural assistance services requested by AID and other requesting agencies, and estimated reimbursements for fiscal years 1973 and 1974. The estimates are subject to change as detailed agreements are worked out.

Agency and Project	Fiscal Year 1972			Fiscal Year 1973			Fiscal Year 1974		
	Actual	Man-	Estimated	Actual	Man-	Estimated	Actual	Man-	Estimated
	Amount	Years	Amount	Amount	Years	Amount	Amount	Years	Amount
<u>Agricultural Marketing Service:</u>									
Special Projects.....	\$44,347	1.0	\$47,000		1.0	\$47,000	\$47,000	1.0	
Total, Agricultural Marketing Service.....	44,347	1.0	47,000		1.0	47,000	47,000	1.0	
<u>Animal and Plant Health Inspection Service:</u>									
Training.....	9,878	.5	18,700		.9		10,700	.5	
Technical consultation.....	4,973	.2	6,700		.2		6,700	.2	
Special Projects.....	89,795	3.1	84,800		2.3		69,600	2.1	
Total, Animal and Plant Health Inspection Service.....	104,646	3.8	110,200		3.4		87,000	2.8	
<u>Agricultural Research Service:</u>									
Training.....	89,951	5.0	80,900		5.0		80,900	5.0	
Technical consultation.....	18,073	1.0	13,900		1.0		13,900	1.0	
Special Projects.....	1,199,583	44.0	1,139,500		40.0		1,035,400	37.0	
Total, Agricultural Research Service.....	1,307,607	50.0	1,234,300		46.0		1,130,200	43.0	
<u>Agricultural Stabilization and Conservation Service:</u>									
Training.....	17,400	2.0	17,500		2.0		17,500	2.0	
Special Projects.....	12,279	.2	15,000		.2		15,000	.2	
Total, Agricultural Stabilization and Conservation Service.....	29,679	2.2	32,500		2.2		32,500	2.2	
<u>Cooperative State Research Service:</u>									
Training.....	642	-	660		-		700	-	
Total, Cooperative State Research Service.....	642	-	660		-		700	-	
<u>Economic Research Service:</u>									
Training.....	1,080,412	52.0	964,000		53.0		964,000	53.0	
Technical consultation.....	705,670	29.0	666,000		33.0		666,000	33.0	
Special Projects.....	2,264,806	51.0	1,937,000		49.0		1,600,000	40.0	
Substance.....	3,735,083	-	4,000,000		-		4,000,000	-	
Total, Economic Research Service.....	7,785,971	132.0	7,567,000		135.0		7,230,000	126.0	
<u>Extension Service:</u>									
Training.....	94,329	4.9	96,475		4.3		96,475	4.2	
Technical consultation.....	94,218	4.4	97,315		4.9		97,315	4.8	
Special Projects.....	1,213,798	41.2	646,269		19.3		363,686	10.9	
Total, Extension Service.....	1,402,345	50.5	840,059		28.5		557,476	19.9	

Agency and Project	Fiscal Year 1972		Fiscal Year 1973		Fiscal Year 1974	
	Actual	Estimated	Man-	Years	Estimated	Man-
	Amount	Amount	Years	Amount	Amount	Years
<u>Farmer Cooperative Service:</u>						
Training.....	35,100	36,000	2.0	2.0	36,000	2.0
Technical consultation.....	2,000	2,000	-	-	2,000	-
Special Projects.....	107,423	57,000	3.0	2.0	36,000	1.0
Total, Farmer Cooperative Service.....	144,523	95,000	5.0	4.0	74,000	3.0
<u>Farmers Home Administration:</u>						
Training.....	104,000	73,000	5.0	5.0	73,000	5.0
Technical consultation.....	12,000	12,000	1.0	1.0	12,000	1.0
Special Projects.....	355,000	175,000	11.0	5.0	160,000	4.0
Total, Farmers Home Administration.....	471,000	260,000	17.0	11.0	245,000	10.0
<u>Forest Service:</u>						
Training.....	66,000	42,000	3.0	3.0	42,000	3.0
Technical consultation.....	14,000	13,000	1.0	1.0	13,000	1.0
Special Projects.....	137,000	204,000	5.0	8.0	204,000	8.0
Total, Forest Service.....	217,000	259,000	10.0	12.0	259,000	12.0
<u>Office of Management Services:</u>						
Training.....	89,987	94,000	7.0	7.0	94,000	7.0
Technical consultation.....	48,446	50,000	3.0	3.0	50,000	3.0
Special Projects.....	34,727	36,000	2.0	2.0	36,000	2.0
Total, Office of Management Services.....	173,160	180,000	12.0	12.0	180,000	12.0
<u>Rural Electrification Administration:</u>						
Training.....	8,372	9,000	.3	.3	9,000	.3
Total, Rural Electrification Administration.....	8,372	9,000	.3	.3	9,000	.3
<u>Soil Conservation Service:</u>						
Training.....	142,002	147,000	7.0	8.0	147,000	8.0
Technical consultation.....	9,245	9,000	1.0	1.0	9,000	1.0
Special Projects.....	756,998	434,000	30.0	16.0	260,000	9.0
Total, Soil Conservation Service.....	908,245	590,000	38.0	25.0	416,000	18.0

Agency and Project	Fiscal Year 1972		Fiscal Year 1973		Fiscal Year 1974	
	Actual	Man- Years	Estimated	Man- Years	Estimated	Man- Years
	Amount		Amount		Amount	
<u>Statistical Reporting Service:</u>						
Training.....	32,062	1.0	72,300	3.0	55,300	3.0
Technical consultation.....	23,368	1.0	25,800	1.0	25,800	1.0
Special Projects.....	146,647	11.0	190,800	7.0	220,000	8.0
Total, Statistical Reporting Service.....	202,077	13.0	288,900	11.0	301,100	12.0
<u>Total, United States Department of Agriculture.....</u>	<u>12,799,614</u>	<u>334.8</u>	<u>11,513,619</u>	<u>291.4</u>	<u>10,568,976</u>	<u>262.2</u>
<u>Recapitulation:</u>						
Training.....	1,770,135	90.7	1,651,535	93.5	1,626,575	93.0
Technical consultation.....	931,993	41.6	895,715	46.1	895,715	46.0
Special Projects.....	6,362,403	202.5	4,966,369	151.8	4,046,686	123.2
Subsistence.....	3,735,083	-	4,000,000	-	4,000,000	-
<u>Total, United States Department of Agriculture.....</u>	<u>12,799,614</u>	<u>334.8</u>	<u>11,513,619</u>	<u>291.4</u>	<u>10,568,976</u>	<u>262.2</u>

PASSENGER MOTOR VEHICLES

The 1974 Budget proposes the replacement of 1 passenger motor vehicle. The vehicle proposed for replacement has mileage of more than 72,000 and is more than 6 years old. The number of vehicles operated by the Service was reduced from 9 to 6 in fiscal year 1970 and will remain at 6 for fiscal years 1972, 1973 and 1974.

The passenger motor vehicles of the Economic Research Service are used for necessary field travel in carrying out the following: (1) a national program of economic research and service work related to the utilization of resources in agriculture, problems of adjustments of farm population, and farm financial problems; (2) a marketing economic research program relating to market potentials, distribution, and merchandising of agricultural products. The automobiles are used for travel to farms, market terminals, offices of produce dealers and truckers, processing plants, canneries, stockyards, tobacco auction markets, cotton gins, plantation and compress operators, railroad yards, piers, grain elevators, and warehouses, where use of common carrier is not feasible.

Age and mileage data for passenger motor vehicles on hand as of June 30, 1972 are as follows:

Age Data			Mileage Data		
Age-Year Model	Number of Vehicles	Percent of Total	Lifetime Mileage (thousands)	Number of Vehicles	Percent of Total
1967 or older	5	83	80-100	1	17
1968	- -	- -	60-80	1	17
1969	1	17	40-60	3	50
1970	- -	- -	20-40	1	17
1971	- -	- -	Under 20	- -	- -
1972	- -	- -			
Total	<u>6</u>	<u>100</u>		<u>6</u>	<u>100</u>

